EVENT APPENDIX 2002-001 A

Single Integrated Air Picture (SIAP)
Air Warfare Command and Control Multi-Source Integrator (MSI) Demonstration
Event Appendix

MARCH 2002

SINGLE INTEGRATED AIR PICTURE (SIAP)
System Engineering
Task Force (SE TF)

1931 Jefferson Davis Highway
Crystal Mall 3, Suite 1142
Arlington, VA 22203

20020829 011

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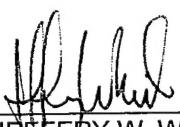
JEFFERY W. WILSON
Captain, U.S. Navy
Technical Director
Single Integrated Air Picture
System Engineer Task Force
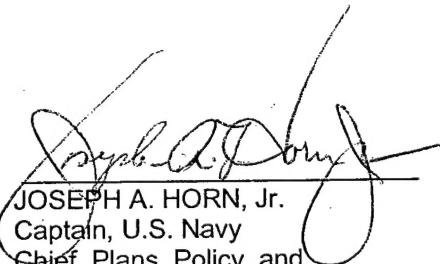
JOSEPH A. HORN, Jr.
Captain, U.S. Navy
Chief, Plans, Policy, and
Resources Division
US Joint Forces Command J61
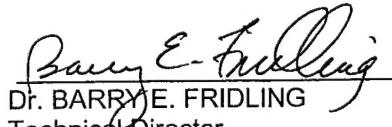
Dr. BARRY E. FRIDLING
Technical Director
Joint Air and Missile
Defense Organization

EXECUTIVE SUMMARY

ISSUE

Recent studies have shown that effective fusion/correlation techniques, algorithms, and technologies are available, but there is a lack of common quantitative standards for objectively assessing the performance of candidate Multi-Source Integrator (MSI) systems. Recommendations call for development of technical, operational, and interoperability standards for an objective fusion/correlation capability.

BACKGROUND

For purposes of this effort, multi-source integration is defined as the process that (1) performs association/correlation and fusion of target track and measurement data received over a variety of tactical and intelligence data networks (e.g., Link 11, Link 16, CEC, TIBS, and Radar feeds) to create and maintain a composite track-file database, and (2) combines *a priori* data with dynamic data. The MSI systems may have organic sensors that contribute to the composite track-file database, and they may also have the capability to both transmit and receive data on the various data links.

APPROACH

Following a three-phased approach, the Air Warfare Command and Control Multi-Source Integrator (MSI) Demonstration will baseline performance of existing MSI systems. This effort is sponsored by the Single Integrated Air Picture System Engineer (SIAP SE) in concert with United States Joint Forces Command (USJFCOM) and Joint Air and Missile Defense Organization (JTAMDO). Phase One will be conducted during the Joint Combat Identification Evaluation Team 2002 (JCIET 02) field-environment event, 15-26 Apr 02, and will require passive (open loop) operation of each participating system. Phases Two and Three will be conducted in laboratory environments. Specifically, Phase Two will require passive operation, but the MSI systems will be able to use their own local sensors; Phase Three will incorporate the systems into the network (closed loop) as active participants.

The baseline performance of current technologies will be established using the participating systems' composite track-file databases, quantitative comparisons to the available truth data, and analysis of results from participating systems. Results from each of the three phases of this demonstration will be used to provide recommendations for operational, technical, and interoperability standards for an objective fusion/correlation capability that maps to Joint Requirements Oversight Council (JROC)-validated requirements.

SCOPE

This appendix documents Phase One of the MSI Demonstration. Specifically, Phase One will use live-data inputs from the JCIET 02 field-environment, 15-26 Apr 02.

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1. INTRODUCTION

This document is intended to facilitate the planning, execution, analysis, and reporting efforts for Phase One of the Air Warfare Command and Control Multi-Source Integrator (MSI) Demonstration conducted during the Joint Combat Identification Evaluation Team 2002 (JCIET 02) field-environment event in Gulfport, MS, 15-26 Apr 02. This Appendix is a companion to the Standard Single integrated Air Picture System Engineer (SIAP SE) Data Management and Analysis Plan (DMAP).

1.1 Background

During Phase One of the MSI Demonstration, the Government is providing an opportunity for MSI system vendors and sponsoring agencies to demonstrate their products using live data feeds from the JCIET 02 field-environment event. The baseline performance of current technologies will be established using the participating systems' composite track-file databases, quantitative comparisons to the available truth data, and analysis of results from participating systems. Results from each of the three phases of this demonstration will be used to provide recommendations for operational, technical, and interoperability standards for an objective fusion/correlation capability that maps to Joint Requirements Oversight Council (JROC)-validated requirements.

1.2 Roles and Responsibilities

Table 1 lists the primary points of contact for the MSI Demonstration.

Table 1. MSI Demonstration Points of Contact

Contact	Organization	Role	Phone
Major Dave Chelen	SIAP SE Task Force	Event co-sponsor/Tech Rep	(703) 602-6441 x252
Darrell Schultz	SIAP SE Task Force	Data Analysis and Reporting	(703) 602-6441
LCDR Pat Bindl	USJFCOM	Event co-sponsor/Logistics Rep	(757) 836-5869
John Dorris	USJFCOM	Data feeds/Logistics Rep	(757) 836-5881
Philip Yanni	USJFCOM/Anzus	Data feeds/Logistics Rep	(858) 547-9128
Stan Bialas	USJFCOM	Event Logistics Rep	(757) 222-4817
John Bagg	USJFCOM/Raytheon	Data Distribution/ (Participant)	(727) 302-2883
CDR Kevin Redman	NAVSEA Contracts	Bailment/Legal issues	(202) 781-0759
Sherry Bradley	NAVSEA Contracts	Bailment/Legal issues	(703) 769-4744
Aman Adeli	JITC	Data collection and recording	(520) 538-5474
Jeff Lutz	JCIET	Event host and data support	(850) 882-6700 x7500
Michael Badillo	NSWC Corona	Data Analysis (PET)	(909) 273-4865
Major David Buell	PMS 465	CEC compliance	(202) 781-2462
Greg Moyle	Raytheon (St Pete)	SIAP Fusion Engine (Participant)	(727) 302-3409
Mark O'Keefe	Raytheon	SIAP Fusion Engine/Sentry (Participant)	(978) 858-4913
Tom Nichols	Thales-Raytheon	Sentry System (Participant)	(714) 446-2894
Bill Reilly	Thales-Raytheon	Sentry System (Participant)	(714) 446-2120
Dan DeSollar	Thales-Raytheon	Sentry System (Participant)	(714) 446-2303
Dan Hicks	WSMR	KABIC System (Participant)	(505) 678-6088
David Himelright	WSMR	KABIC System (Participant)	(505) 678-5833

1.2.1 SIAP Analysis Team (SAT)

The SAT is responsible for all data analysis and reporting efforts associated with the MSI Demonstration. For Phase One of the MSI demonstration, the SAT will perform an IADS performance assessment, prepare individual-performance reports for respective participants' systems, and prepare group-performance assessments for Government-only use.

1.2.2 Sponsor Agencies

1.2.2.1 SIAP SE Task Force

The Single Integrated Air Picture System Engineer (SIAP SE) Task Force is a co-sponsor for the MSI Demonstration and is responsible for providing oversight to all data collection and analysis efforts associated with these events.

1.2.2.2 USJFCOM

United States Joint Forces Command (USJFCOM) is a co-sponsor for the MSI Demonstration and is responsible for providing operational guidance and logistical support for the Phase One effort.

1.2.2.3 JTAMDO

The Joint Air and Missile Defense Organization (JTAMDO) is a co-sponsor for the MSI Demonstration and is responsible for providing oversight and technical and operational guidance for the events.

1.2.2.4 JCIET

The Joint Combat Identification Evaluation Team (JCIET) is responsible for hosting the JCIET 02 event. For the MSI Demonstration, they will be providing technical support and data feeds to the participants.

1.2.3 Support Agencies

1.2.3.1 NAVSEA Contracts

NAVSEA Contracts representatives (PCO) are serving as liaison between demonstration participants and the demonstration manages. The PCO's role is to facilitate data collection rather than follow steps leading to contract award. They ensure procedures are followed to protect participants' proprietary interests and to ensure the Government's interests are protected as well.

1.2.3.2 Participants

Participants include both commercial vendors and Government agencies. For participation in the MSI Demonstration, their respective MSI System must function at the Command and Control (C2) system level (e.g., link level), support the use of more than one type of input source, and provide access to output data (track database data-extraction file) for recording and analysis. Participants are responsible for the transport, set up, operation, maintenance, storage, teardown, and removal of their individual systems and support equipment. Participants are subject to the terms and conditions of the event's Bailment Agreement provided as Enclosure 2. Table 2 provides a summary of the participants and a 'black box' description (to protect proprietary interests) of their respective MSI system.

Table 2. MSI Demonstration Participants

Participant	System	"Black Box" Description
Raytheon (St Pete)	SIAP Fusion Engine	The SIAP Fusion Engine is the heart of the Joint Expeditionary Engagement Demonstration System (JEEDS) and is built to correlate data from multiple sources to create a fused Joint Composite Tracking Network (JCTN)
Thales-Raytheon*	Sentry System	The Sentry System is based on the tactically deployed International air defense command and control systems built and serviced by the Thales-Raytheon Corporation. This system is certified for use with multiple data sources.
WSMR (government)	KABIC System	The KABIC fusion engine can use any number of inputs from any sensor or instrument providing time stamped two or three-dimensional kinematic reports. ID reconciliation is an integral part of the system.

*Not authorized to receive CEC data at this time due to potential non-US affiliations

1.2.3.3 Joint Interoperability Test Command (JITC)

JITC is responsible for all data collection, reduction, and storage efforts for the MSI Demonstration. They are also responsible for providing event-timing to event participants and participating in the SAT process.

2. OVERVIEW

Following a three-phased approach, the Air Warfare Command and Control Multi-Source Integrator Demonstration will baseline performance of existing MSI systems. This effort is sponsored by the Single Integrated Air Picture System Engineer (SIAP SE) in concert with United States Joint Forces Command (USJFCOM) and Joint Air and Missile Defense Organization (JTAMDO). Phase One will be conducted during the Joint Combat Identification Evaluation Team 2002 (JCIET 02) field-environment, 15-26 Apr 02, and will require passive (open loop) operation of each participating system. Phases Two and Three will be conducted in laboratory environments. Specifically, Phase Two will require passive operation, but the MSI systems will be able to use their

own local sensors; Phase Three will incorporate the systems into the network (closed loop) as active participants.

The following are previous MSI studies that form the basis for the MSI demonstrations:

- MSI System Engineering Team sponsored by the Combat System Functional Allocation Board, 1995-7
- Time Variant Multi-Hypothesis Correlator Assessment, ACIET 00 Theater Air and Missile Defense Interoperability (TAMD I) Advanced Concept Technology Demonstration, sponsored by USJFCOM, 2000-1

Results from these studies demonstrated that fusion/correlation techniques, algorithms, and technologies were mature, but that there was a lack of common quantitative standards for assessing performance of candidate MSI systems. The studies recommended the development of technical, operational, and interoperability standards for an objective fusion/correlation capability.

For the MSI Demonstration, the Government will derive objective, quantitative performance criteria from Theater Air and Missile Defense (TAMD), Combat Identification (CID) Capstone Requirements Documents (CRD), and the SIAP metrics (discussed in Chapter 3 of the standard DMAP). The data analysis will be performed based on ground truth data, inputs from networks, and data recorded from each participating MSI system.

Due to fiscal and schedule constraints, data feeds used during Phase One of the MSI Demonstration will be provided by Raytheon and ANZUS contractors. The supporting data-distribution architecture has been carefully constructed to ensure proprietary interests are protected and that all participants receive identical data feeds. Specific details of the architecture are provided in later sections of this document.

2.1 Goal

The goal of the MSI Demonstration is to conduct controlled laboratory and field demonstrations to baseline the performance of existing Air Warfare Command and Control MSI systems. This goal applies to all three phases of the demonstration.

2.2 Objective

The objective for Phase One of the MSI Demonstration is to establish an IADS performance assessment baseline of current MSI technologies by:

1. Conducting quantitative comparisons of ground truth data (TSPI) to each MSI system's composite track-file database
2. Analyzing results from each of the participating systems

2.3 Products

During Phase One of the MSI Demonstration, the baseline performance of current technologies will be established using the participating systems' composite track-file databases, quantitative comparisons to the available truth data, and analysis of results from participating systems. Results from each of the three phases of this demonstration will be used to provide recommendations for operational, technical, and interoperability standards for an objective fusion/correlation capability that maps to Joint Requirements Oversight Council (JROC)-validated requirements.

The products expected from the MSI Demonstration are as follows:

1. Documentation of the baseline performance of current technologies.
2. Recommendations for operational, technical, and interoperability standards for an objective fusion/correlation capability that map to JROC-validated requirements.
3. Generation of a "requirements document" and an "interface standard" for development of objective MSI technologies.

2.4 Schedule

Following a three-phased approach, the Air Warfare Command and Control Multi-Source Integrator (MSI) Demonstration will baseline performance of existing MSI systems. Phase One will take place during JCIET 02 in the vicinity of Gulfport and Camp Shelby, MS, 15-26 April 02, and will require passive (open loop) operation of each participating system. Phases Two and Three are not currently scheduled, but will be conducted in laboratory environments. Specifically, Phase Two will require passive operation, but the MSI systems will be able to use their own local sensors; Phase Three will incorporate the systems into the network (closed loop) as active participants. Figure 1 depicts the schedule of activities for Phase One of the MSI Demonstration.
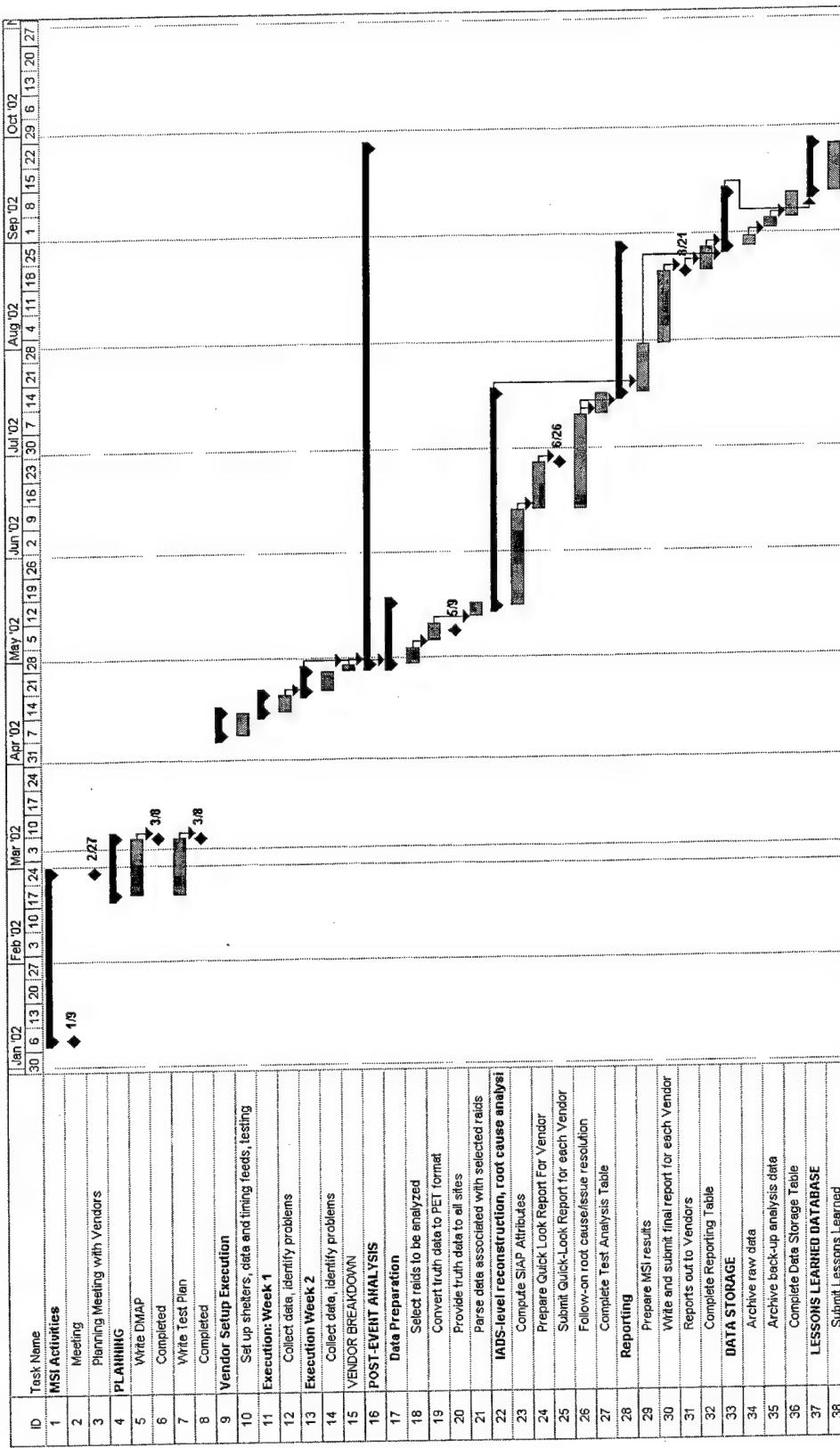
Figure 1. MSI Demonstration Phase One activity schedule

ID	Task Name
1	**MSI Activities**
2	Meeting
3	Planning Meeting with Vendors
4	**PLANNING**
5	Write DMAP
6	Completed
7	Write Test Plan
8	Completed
9	**Vendor Setup Execution**
10	Set up shelters, data and timing feeds, testing
11	**Execution: Week 1**
12	Collect data, identify problems
13	**Execution Week 2**
14	Collect data, identify problems
15	VENDOR BREAKDOWN
16	**POST-EVENT ANALYSIS**
17	**Data Preparation**
18	Select raids to be analyzed
19	Convert truth data to PET format
20	Provide truth data to all sites
21	Parse data associated with selected raids
22	IADS-level reconstruction, root cause analysi
23	Compute SIAP Attributes
24	Prepare Quick Look Report For Vendor
25	Submit Quick-Look Report for each Vendor
26	Follow-on root cause/issue resolution
27	Complete Test Analysis Table
28	**Reporting**
29	Prepare MSI results
30	Write and submit final report for each Vendor
31	Reports out to Vendors
32	Complete Reporting Table
33	**DATA STORAGE**
34	Archive raw data
35	Archive back-up analysis data
36	Complete Data Storage Table
37	**LESSONS LEARNED DATABASE**
38	Submit Lessons Learned

2.4.1 Daily Schedule

Figure 2 provides the schedule for daily JCIET activities. MSI Demonstration participants are expected to participate in data collection activities during week one, 15-19 April, from 0900-1400, and during week 2, 21-25 April, from 1700-2200. Participants are not required to attend any of the daily crew, mission, or element briefings, but participation is expected at the demonstration-specific briefings that will be coordinated by the event's sponsors.

Week 1	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800
Week 2	1500	1600	1700	1800	1900	2000	2100	2200	2300	0000	0100	0200
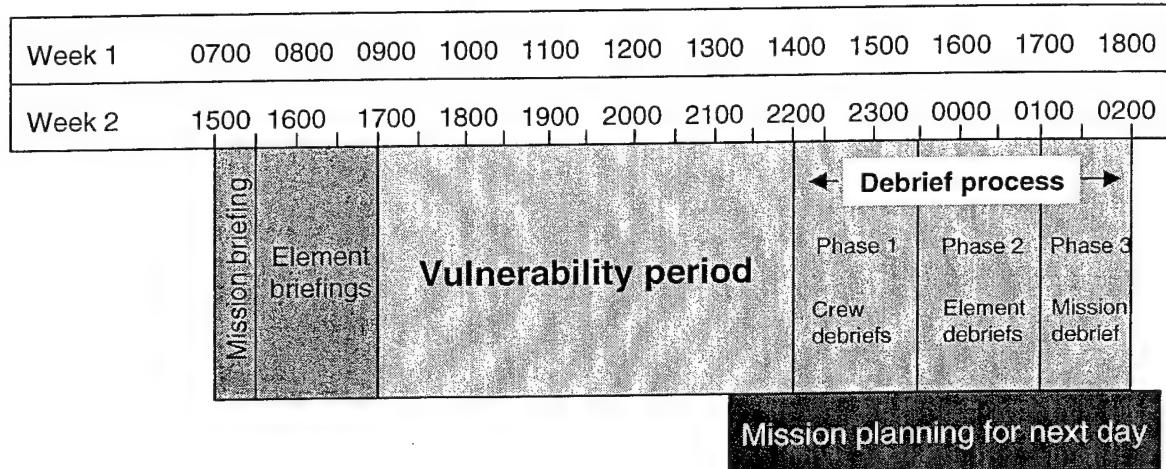
Figure 2. Daily schedule of JCIET activities, 15-25 April 02.

2.5 Event Planning

Table 3 provides an event planning worksheet for the MSI Demonstration. Included in the table is a summary of the participants, their respective systems, and the applicable live-data input feeds to be used by each system.

Table 3. MSI Demonstration Event Planning Worksheet

Name of Event: MSI Demonstration	Date(s): April 15-26, 2002	Location: JCIET 02 Gulfport, MS	Type (HWIL, Live): Live exercise, data collection
Vendors participating:			

QTY	Vendor/MSI System Name	Software Version (if applicable)	Data collection type (Automated, manual, both)
1 1 1	Thales-Raytheon Systems Company LLC: Sentry System Raytheon Company: SIAP Fusion Engine WSMR: KABIC System		JITC will collect data from all live-data input feed, data-distribution systems outputs, and participating MSI systems' output files. MSI system output file parameters must be compatible with PET.

List sources to be utilized (Link 11, Link 16, SADL, CEC, TIBS, TPS-75, STARS/DASS, and/or ARSR-4):

Thales-Raytheon Systems Company LLC, Sentry System: Link 11, Link 16, TPS-75, ARSR-4, SADL

Raytheon Company, SIAP Fusion Engine: Link 11, Link 16, TPS-75, ARSR-4, CEC

WSMR, KABIC System: Link 11, Link 16, TPS-75, ARSR-4, CEC

3. PROCESS FOR IADS PERFORMANCE ASSESSMENT

The following sub-sections are applicable to Phase One of the MSI Demonstration.

3.1 Critical Experiments

The MSI Demonstration is intended to support Critical Experiment Five, Identification Processing, as described in the standard DMAP and as identified in the JCIET event appendix.

3.2 Operational Context

As a live-fly exercise, the JCIET 02 event has its own scenario and operations that are independent of the SIAP Common Reference Scenario. Systems participating in the MSI Demonstration will receive live feeds (as specified and pending availability) from networks and radar systems operating within the JCIET 02 operational context.

3.3 SIAP Metrics

During the scheduled JCIET 02 Vulnerability Period, the Government will collect and record data from the participating MSI systems' composite track-file databases. The SIAP metrics will be generated from this data to support quantitative comparisons to the available truth data as well as analysis of the results from the systems participating in JCIET activities.

3.4 Root-Cause Analysis

To protect proprietary interests, MSI participants are requested to assist the SAT with root-cause analysis efforts if/as needed. Participants are asked to assist in investigating and identifying the cause(s) of identified problems by analyzing the raw-data inputs received relative to the resulting system-outputs generated.

3.5 Perturbation Analysis

The SAT will not conduct a perturbation analysis for Phase One of the MSI Demonstration. The ODDSCAPE tool used by the SAT and discussed in the standard DMAP is not designed to support perturbation analysis of MSI systems.

3.6 Critical Experiments Tables

Although the MSI Demonstration supports the objectives of Critical Experiment Five, Identification Processing, the procedures for Phase One are unique enough that listing the Critical Experiment's table is not warranted.

4. EVENT EXECUTION AND DATA REQUIREMENTS

4.1 Test Plan and Supporting Documents

An independent test plan is not applicable to Phase One of the MSI Demonstration. This event appendix of the standard DMAP will serve to document all applicable test plan procedures for the Phase One effort.

4.1.1 Test Methodology

In general, MSI Demonstration participants are expected to participate in data collection activities as directed by the Government during week one, 15-19 April, from

0900-1400, and during week 2, 21-25 April, from 1700-2200. Participants are not required to attend any of the daily crew, mission, or element briefings, but participation is expected at the demonstration-specific briefings that will be coordinated by the event's sponsors.

Demonstration participants and Government representatives will be responsible for maintaining data collection logs that identify data collection times, network and system anomalies, and other applicable comments. The data collection logs will be used to identify 'good runs' for data reduction and analysis purposes.

As detailed in the Bailment Agreement (Section 4.4.1), a Government team will be the primary operators of all Government-furnished equipment (e.g., data input feeds, interfaces, and recorders) and will ensure strict control of data and results to protect proprietary interests and intellectual property. Participating vendors will be responsible for the transport, set up, operation, maintenance, storage, teardown, and removal of their individual systems and support equipment. All participants will be required to provide a copy of (or access to) their system's track database data-extraction file.

4.1.2 Letter of Instruction

A letter of instruction is provided at Enclosure 1 to this document and provides detailed information regarding the demonstration's site layout, event logistics, parking and facility information, and security procedures.

4.2 Test Item Description and Configuration

For purposes of this effort, multi-source integration is defined as the process that (1) performs association/correlation and fusion of target track and measurement data received over a variety of tactical and intelligence data networks (e.g., Link 11, Link 16, CEC, TIBS, and Radar feeds) to create and maintain a composite track-file database, and (2) combines a priori data with dynamic data. The MSI systems may have organic sensors that contribute to the composite track-file database, and they may also have the capability to both transmit and receive data on the various data links.

For participation in this demonstration, the MSI systems must function at the command and control (C2) system level (e.g., link level) and support the use of more than one type of input source. To protect the proprietary interests of all participants, the MSI systems will be treated as "block boxes" in terms of their functionality and description. A summary of the participating systems is provided in Table 2.

Pending availability, the Government will provide the following live data feeds for use by participating MSI systems: Link 11, Link 16, SADL, TIBS, CEC, TPS-75, and ARSR-4. The Government will also record data from each participating MSI system as well as truth data (e.g., TSPI) from all network participants (e.g., data link, intelligence, local radar systems). The recorded data will be used for post-event, quantitative performance analysis as well as for 'playback' during follow-on event phases in a

laboratory environment. To permit objective analyis of results between the participating systems, the data feeds will be provided in parallel to all systems. Due to fiscal and schedule constraints, data feeds used during Phase One of the MSI Demonstration will be provided by Raytheon and ANZUS contractors. The supporting data-distribution architecture has been carefully constructed to ensure proprietary interests are protected and that all participants receive identical data feeds.

The standard time-source available to support the MSI Demonstration is UTC/GPS, and JITC is responsible for providing this data feed to all participants. Additional details concerning the event setup and data-feed configurations are provided in the following sections.

4.2.1 Data Extraction Diagrams

Figure 3 provides a notional depiction of how event participants will extract live-data feeds from the JCIET networks. Indicated by bold lines in the diagram are five feeds (ARSR-4, TPS-75, CEC, Link 11, and Link 16) considered to be the "core" data feeds that the Government will provide (pending availability). The remaining feeds (SADL, TIBS, STARS/DAAS) will be recorded and made available to participants (pending availability), but are of secondary importance for the demonstration. As indicated by the dashed lines in Figure 3, Link 16 and Link 11 will be available either directly or through Rosetta (see Section 4.2.1.5).
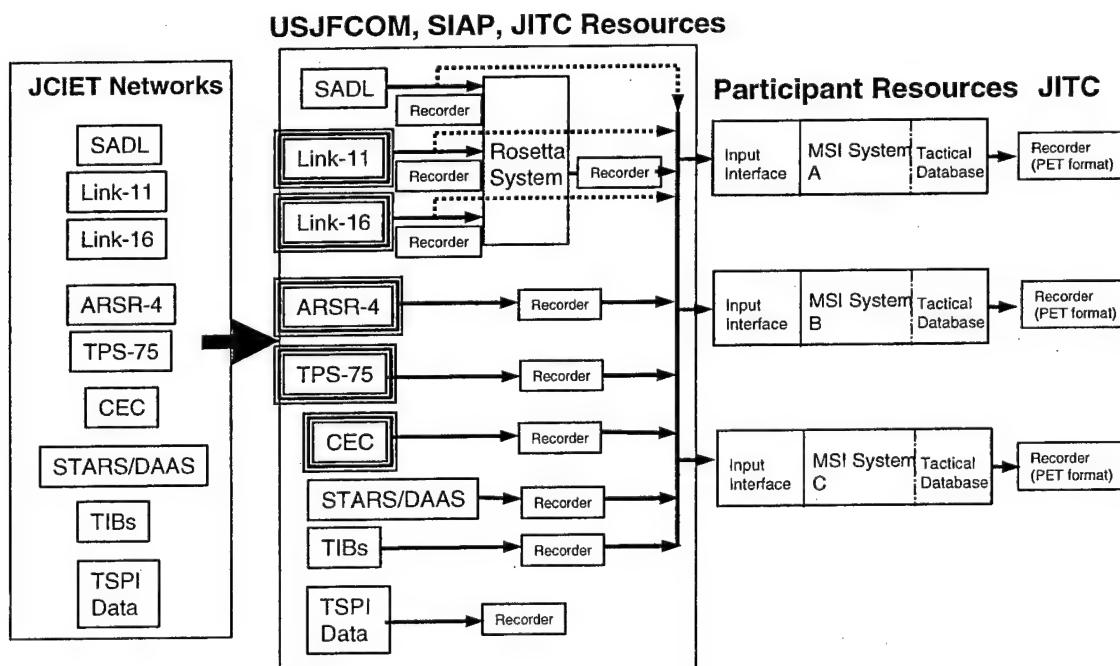
Figure 3. Notional MSI Demonstration data distribution diagram.

4.2.1.1 ARSR-4 and TPS-75 Data Feeds

Figures 4 and 5 depict how the ARSR-4 and the TPS-75 data will be provided to the participants. Two ARSR-4 Radar Sites will participate in the MSI Demo. Within the DRASH-tent complex, Raytheon will distribute the RS-232 synchronous CD-2 data to each vendor and to each data-recording point. Each participant will see "source" data, unmodified, with slight, undetectable delay. Multiple, cascaded splitters allow for distribution of the distance-limited RS-232 data. The ARSR-4 data requires four RS-232 lines, 2 for each of the 2 ARSR-4 radars. Each incoming source (4 ARSR-4s, 1 TPS-75) requires one fiber and distribution net. If TIBS or other CTT net data is available, the distribution will look the same, without the fiber link. If TIBS or other CTT net data is available, the distribution will look similar, but without the fiber link. The data source is located in the JEEDS van.
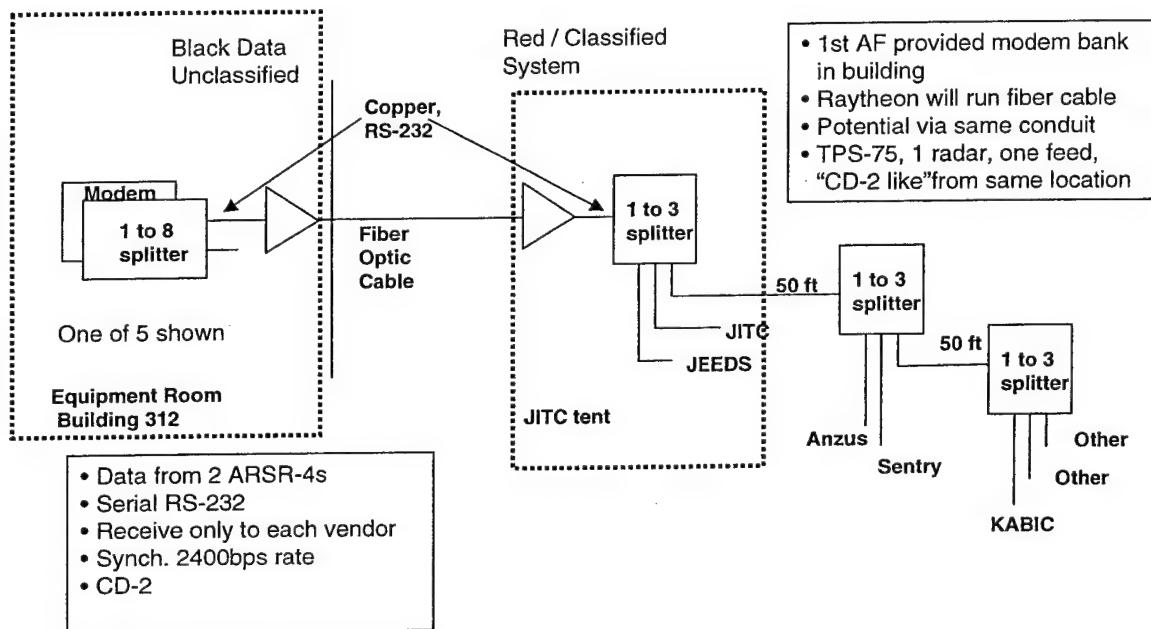
Figure 4. ARSR-4 and TPS-75 data distribution architectures.
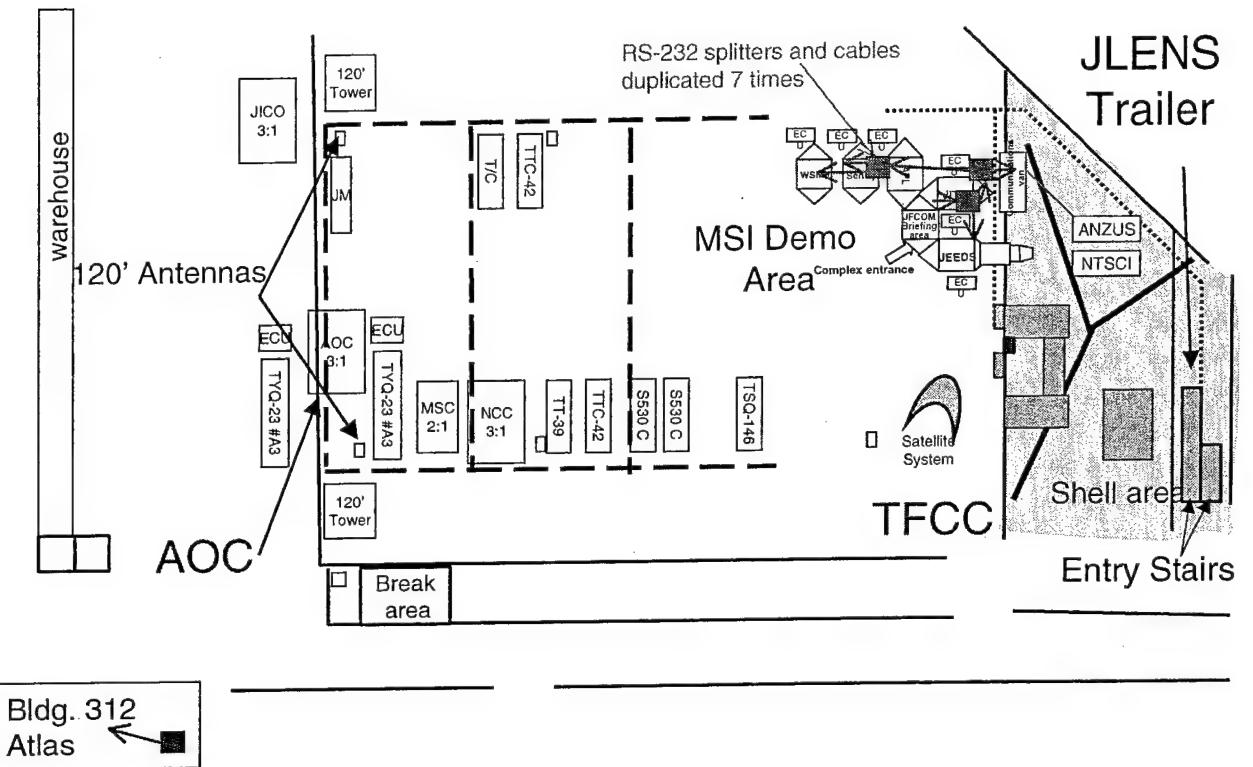
Figure 5. ARSR-4 and TPS-75 RS-232 distribution

4.2.1.2 CEC Data Feed

Figure 6 depicts how CEC data will be provided to participants who are permitted to receive that data (US only). The JEEDS van will serve as the pass through for CEC data. Figure 7 shows the CEC distribution.

CEC data is available at the output of a multi-channel firewall. All outputs are equal, isolated from CEC LAN, and isolated from each other. Distribution is to each approved vendor and to each data-recording point. CEC output is 10Bt, RJ-45 intended to connect to an Ethernet hub. Distances in the compound should not pose a problem, and Raytheon will provide required cables with RJ-45 connectors. Raytheon, along with JITC and JHU/APL, will monitor subsequent nets to assure no loop-backs or other net problems occur. JMAST/TFCC and JHU/APL receive CEC data ahead of the firewall.

CEC Display LAN One Way/Isolated
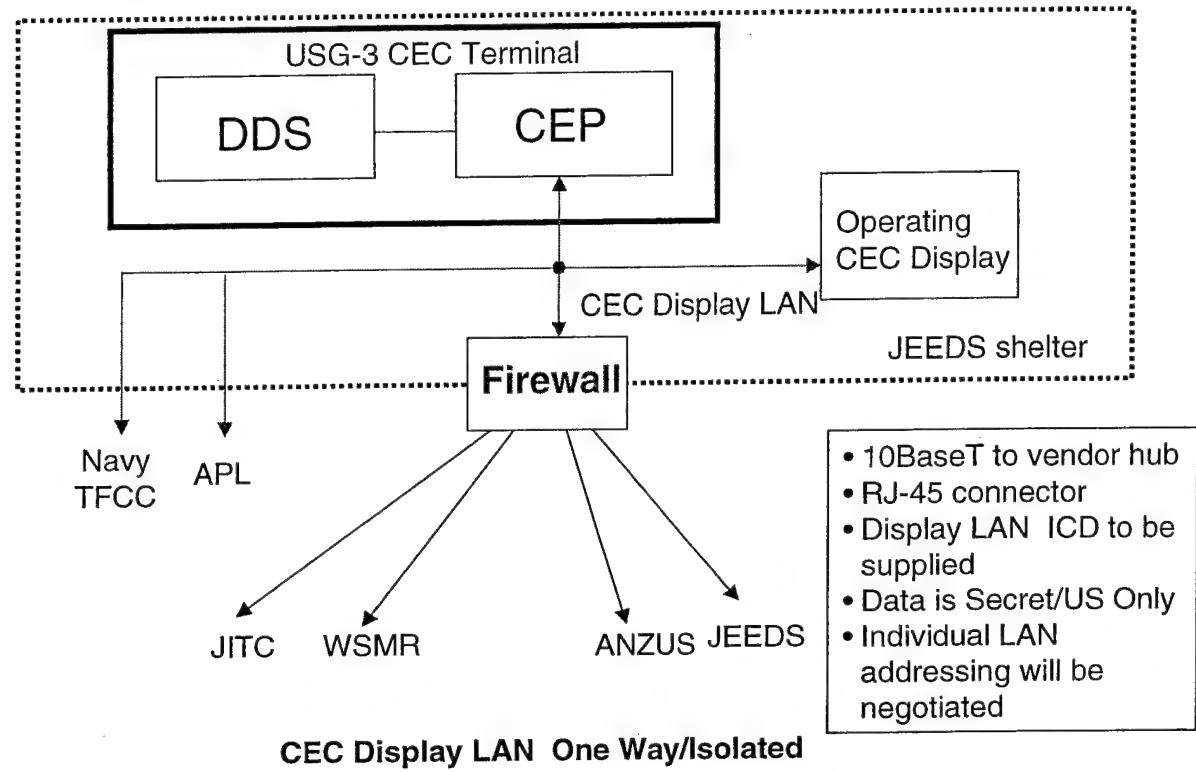
Figure 6. CEC data provided to participants
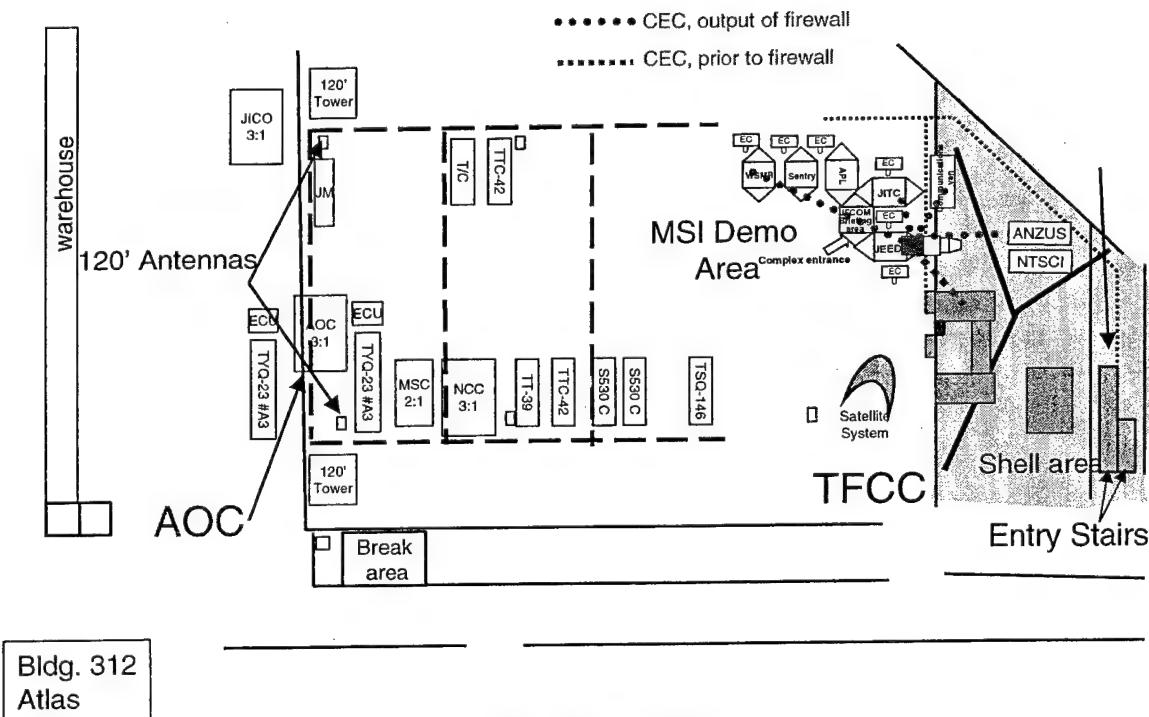
Figure 7. CEC data distribution

4.2.1.3 CEC Display LAN Messages

This section contains detailed descriptions of the format and content of all messages transmitted from the CEP to a generic Combat System (CS). Messages from CEP to a CS are required in the Ethernet interface to report CEP track file information to the CS. These messages are listed in Table 4.

Table 4. CEP to Combat System (CS) Messages

Message Type	Message Name	Page
0X0101	New Track	4
0X0C48	Track State Update for Display	19
0X0307	Drop Track Report	29
0X1801	ID Data	31
0X2405	IFF Mode State	35
Header	Ethernet LAN Buffer Header	

4.2.1.4 Link 16 and Link 11 Data Feeds

Link 16 and Link 11 data will be recorded by the Navy Center for Tactical Systems Interoperability (NCTSI, Norfolk) via RS-232 and provided to ANZUS. ANZUS is responsible for providing Link 11 and Link 16 connectivity to all MSI participants. Figure 8 shows how ANZUS will be providing data to the MSI Participants.
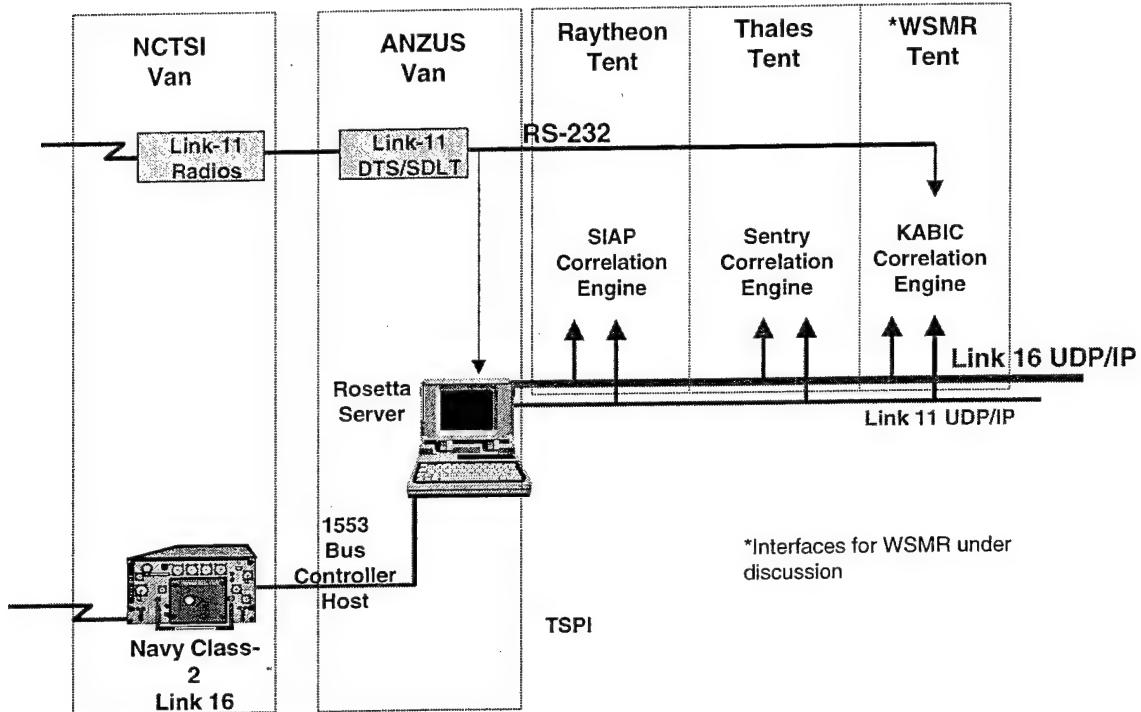
Figure 8. ANZUS connectivity for provision of Link 11 and Link 16 data feeds.

The NCTSI Van will supply required radios. The Link 11 Data Terminal Set will be in the ANZUS spaces and managed by the Rosetta host computer. The Link 11 output feed will be in RS-232 format (ANZUS can split the RS-232 output). The Rosetta host computer receives the RS-232 data and creates Link 11 tracks in the appropriate WGS-84 grid. Raytheon will access these Link 11 tracks via the Rosetta SQL TCP/IP interface. Thales-Raytheon will not use the SQL interface, but Rosetta will bridge the raw RS-232 packets onto TCP/IP and Thales-Raytheon will access the raw Link-11 data via TCP/IP.

Link 16 will be provided from the Navy Class II Ship terminal located in the NCTSI Van. A Rosetta server in the ANZUS spaces will be the Link-16 host and 1553 bus controller. Navigation data will be sent to the Navy Class II Ship terminal by Rosetta, and the raw 1553 data will be converted into tracks. Raytheon will access the Link-16 tracks via the Rosetta SQL TCP/IP interface. Thales-Raytheon will not use the SQL interface, but Rosetta will bridge the raw 1553 packets onto TCP/IP and Thales-Raytheon will access the raw JTIDS terminal data via TCP/IP.

Rosetta will also be used to display the various inputs to the correlators. ANZUS will provide a Rosetta client in the Distinguish Visitor (DV) briefing tent. The JMMTIDS client has the capability of displaying any combination of truth data, data links, and radars. This will be used during DV briefing and is not part of the MSI Demonstration. The Link 16 data will be provided through 1553, and Link 11 will be provided through RS232.

4.2.1.5 Rosetta

Rosetta technology is used to implement an adaptive, real-time, high-speed information processor for the exchange of C4I data among legacy data link, sensors, and the JDN. As the JCTN (CEC) evolves, one of the primary issues is optimizing the use of sensor measurement data with the existing JDN. CEC is generally used at the reference model for a JCTN and Link 16 is used as the reference model for the JDN. Since the JCTN will primarily carry sensor measurements and not C4I, the gateway between the two data links will require a method to manage both measurement data and C4I data. Rosetta combines "ID" information on the JDN with high quality JCTN tracks. Given the limited bandwidth of the JDN, the Information Exchange Requirements will change on a mission-by-mission, minute-by-minute basis requiring an adaptive gateway.

The Rosetta architecture allows abstracting the wireless network protocols from the message standard on a wide variety of data links and sensor data. Non-homogeneous data are normalized and made available for translation. Information Exchange Requirements are defined using the Real-time Query Language (RQL), and the Forwarding Rules Object Gateway manages the exchange. The system includes hosting modules for Link 16 and most legacy data links. The Rosetta technology is currently implemented as part of OSD's Advanced Concept Technology Demonstration for Link 16 / VMF translation and the Theatre Air Missile Defense Interoperability ACTD. A subset of the technology is currently installed in the E-2C Hawkeye and at the NATO Combined Air Operations Center. It is also being implemented as part of the USAF Tactical Air Control Party Program.

4.2.1.6 DAAS

Figure 9 depicts how the DAAS data will be provided to the participants. The data will be generated real time on a DAAS system in Marlborough, MA from live Eglin Air Force Base radar data. Within the Sentry tent, the data will be extracted from the T-1 communications line. The data will be passed through a one-way fiber connection to provide a demarcation between the unclassified DAAS system and the classified MSI systems. The UDP multicast data to each of the participants will be provided on separate Ethernet 10BaseT RJ45 connections from a multiport router running firewall software. Also in the Sentry tent will be a DAAS Air Traffic Control Tower Display showing real-time airspace visible from the radars feeding Eglin. Those radars are the ASR-11 terminal radar at Eglin, the ASR- terminal radar at Ft. Rucker, the ARSR-4 at Tyndall, and the ARSR-4 at Cross City.
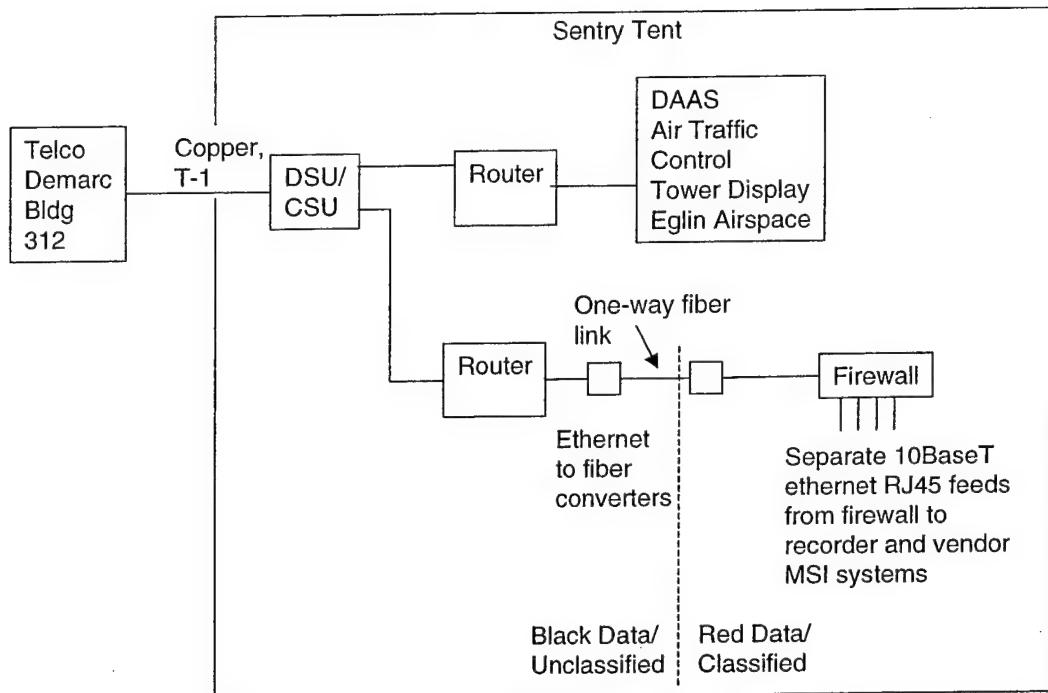
Figure 9. DAAS data provided to the participants

4.2.1.7 JEEDS

Figures 10 and 11 show the JEEDS LAN layout (including remote links) and the JEEDS block diagram, respectively. The JEEDS LAN is the output of one leg of the indicated firewall.

Figure 10 — JEEDS LAN layout

JEEDS Shelter

Firewall — JEEDS shelter Switcher — Rack mounted ATW, Rack mounted Rosetta, Flames

JEEDS Tent

Link to SMDC FOC is very uncertain as of 3/6/02

Ethernet link to SMDC FOC

(TBD) 1/2 mile fiber or phone line

Ethernet link to SMDC FOC

SMDC MaxPac AWarE

JEEDS tent Switcher — SIU's Sensis, Sensis tracker, Laptop Client 1, Client 2, Client 4, Client 5, Laptop Firewall, Maxpac 1, 2

7 ea RS-232

Laptop Client 3 — KIV — Modem — INMARSAT

Ethernet link to JLENS

JLENS

INMARSAT — Modem — KIV — Remote display

Remote

Computers
5 ea E500 laptop clients
2 ea E500 firewalls
2 ea Maxpac
1 ea Sun ULTRA10
1 Ea desk top firewall
1 ea rackmount ATW
1 ea Rackmount Rosetta

Figure 10. JEEDS LAN layout (includes remote links)

Figure 11 — JEEDS Block Diagram

OUTSIDE

PREAMP

Serial Port to satellite Users

ROADSIDE

CURBSIDE

DDS

CEP

CEC Equipment rack

Display / Monitor

CEC Display CDK

Removable Hard Drive

CTT setup laptop
• Display and Control
• Temporary installation

CTT/HR

Serial Interface   Serial Interface

DGPS

JTIDS receiver

ADDS interface

HF radio

Secure UHF/VHF radios

Voice Control Panel

Data Patch Panel

Multisystem Display / Monitor

GBDL/FDL Interface

ATW Fusion Correlation Engine

Rosetta

Flames based simulation/ Stimulation

Removable Hard Drive

Removable Hard Drive

Internal ethernet switch

JEEDS Communications LAN

Local   CEC Display LAN

Firewall 1 — JTIC, Anzus, WSMR

Ethernet to TFCC

(TBD) Ethernet link to SMDC FOC

SMDC MaxPac AWarE

ethernet switch for tent

SIU's Sensis

Sensis tracker SUN Ultra10

Data line interface

Removable Hard Drive

Laptop Client 1, Laptop Client 2, Laptop Client 3, Laptop Client 4, Laptop Client 5

Display clients in adjoining tent

8 ea RS-232

Figure 11. JEEDS Block Diagram

4.2.1.8 ADNet

The JCIET Administrative Net (ADNet) will be supported by the JCIET staff to provide event Timing and truth data (e.g., TPSI). Distribution of the ADNet will be accomplished by the JCIET Staff, and will be to the Demark box on the TAC Pad via fiber optic cable. Access to the JCIET Administrative Net (ADNet, 10BaseT / RJ 45 connector interface) will be limited to Government representatives who have received an IP Address from JCIET (namely JITC and ANZUS). Currently the plan is to have the ADNet terminated in the JITC DRASH Shelter and the ANZUS Van.

4.2.1.9 End-to-End Data-Feed Architecture

Figure 12 depicts the proposed end-to-end data-feed connectivity available for the MSI Demonstration's participants. Table 5 provides a summary of the proposed connectivity to each participant.
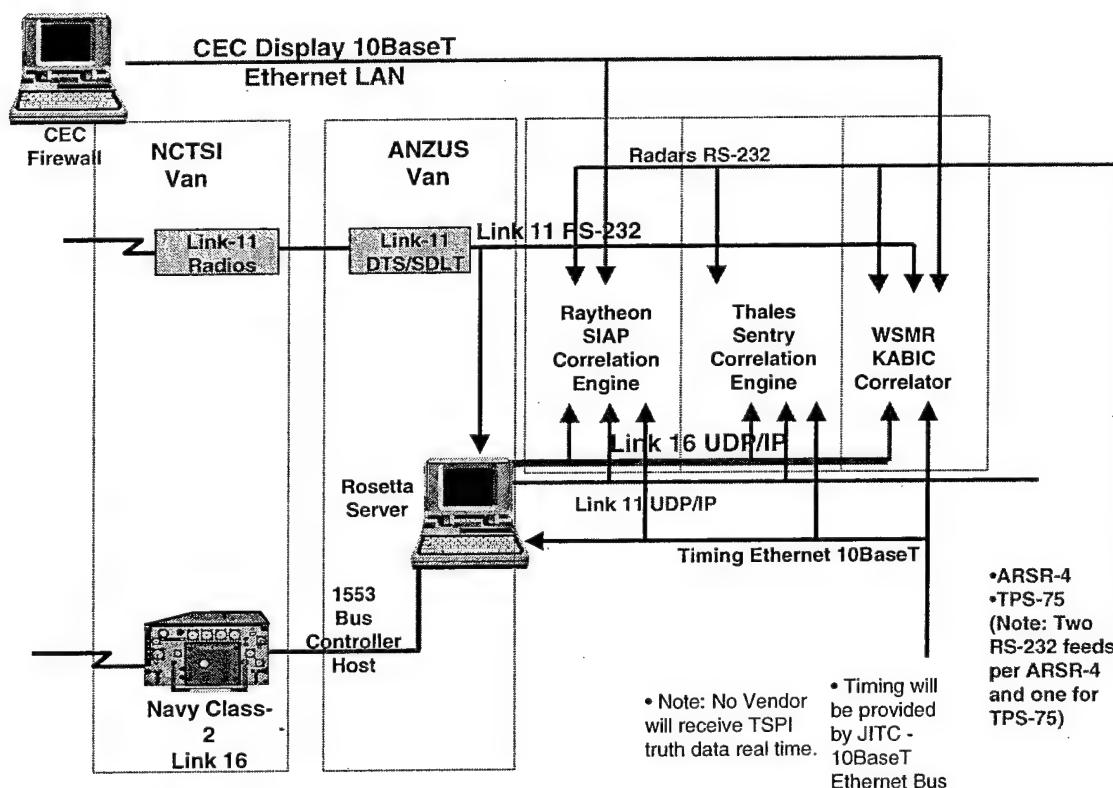
Figure 12. Proposed end-to-end data feed architecture available to participants.

Table 5. Summary of Data Feed Connectivity for each Participant

| |
|---|
| RAYTHEON - Will receive:
    Link 16 by a 1553 bus. Data will be in a "raw" Link 16 format.
    Link 11 by a TCP/IP bus.
    CEC on the CEC Display LAN
    ARSR-4 on a RS-232 wire line
    TSP-75 on a RS-232 wire line
    Timing on an Ethernet Bus 10BaseT RJ 45 Connector |
| THALES-RAYTHEON - Will receive:
    Link 16 via Ethernet (UDP multi-cast). Data will be in a "raw" Link 16 format.
    Link 11 via Ethernet (UDP multi-cast). Data will be in a "raw" Link 11 format.
    ARSR-4 on a RS-232 wire line
    TSP-75 on a RS-232 wire line
    SADL via 1553
    Timing on an Ethernet Bus 10BaseT RJ 45 Connector |
| WSMR* - Will receive:
    Link 16 by a 1553 bus. Data will be in a "raw" Link 16 format.
    Link 11 by a RS-232 wire line.
    CEC on the CEC Display LAN
    ARSR-4 on a RS-232 wire line
    TSP-75 on a RS-232 wire line
    Timing on an Ethernet Bus 10BaseT RJ 45 Connector

* Data interfaces for WSMR are still being discussed |

4.2.1.10   End-To-End MSI Demonstration Area and Event Layout

Figures 13 and 14 depict the proposed MSI Demonstration area and the overall event layout.   Figure 15 gives the fiber optic cable layout at the site.
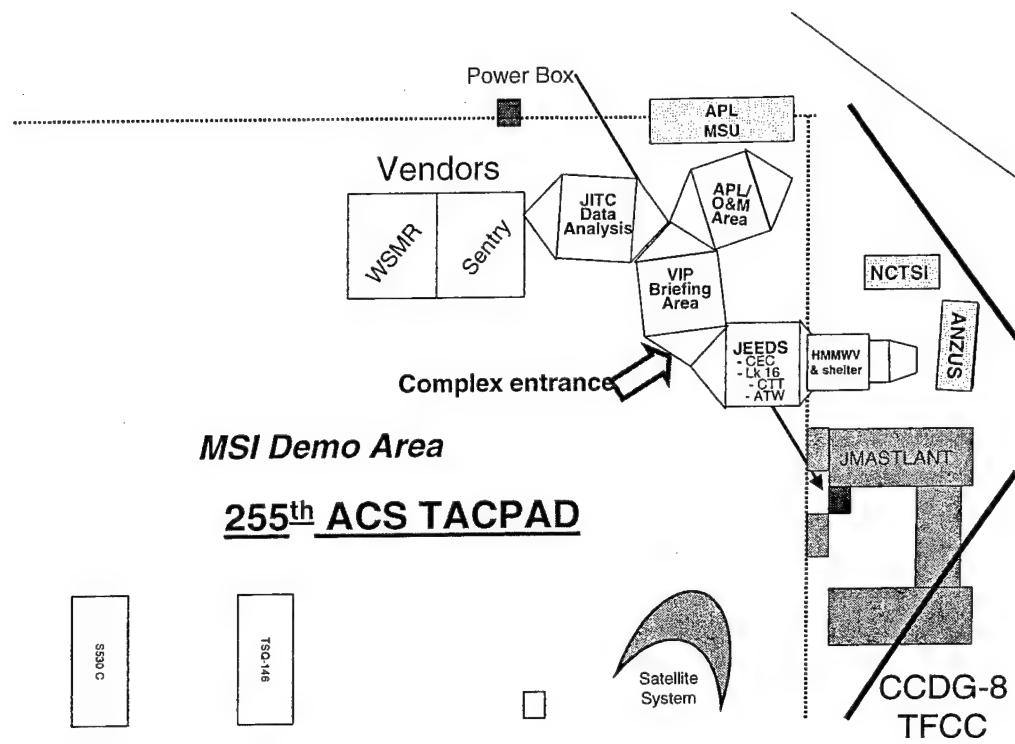
Figure 13. Proposed DRASH tents and equipment layout for MSI Demonstration Area.
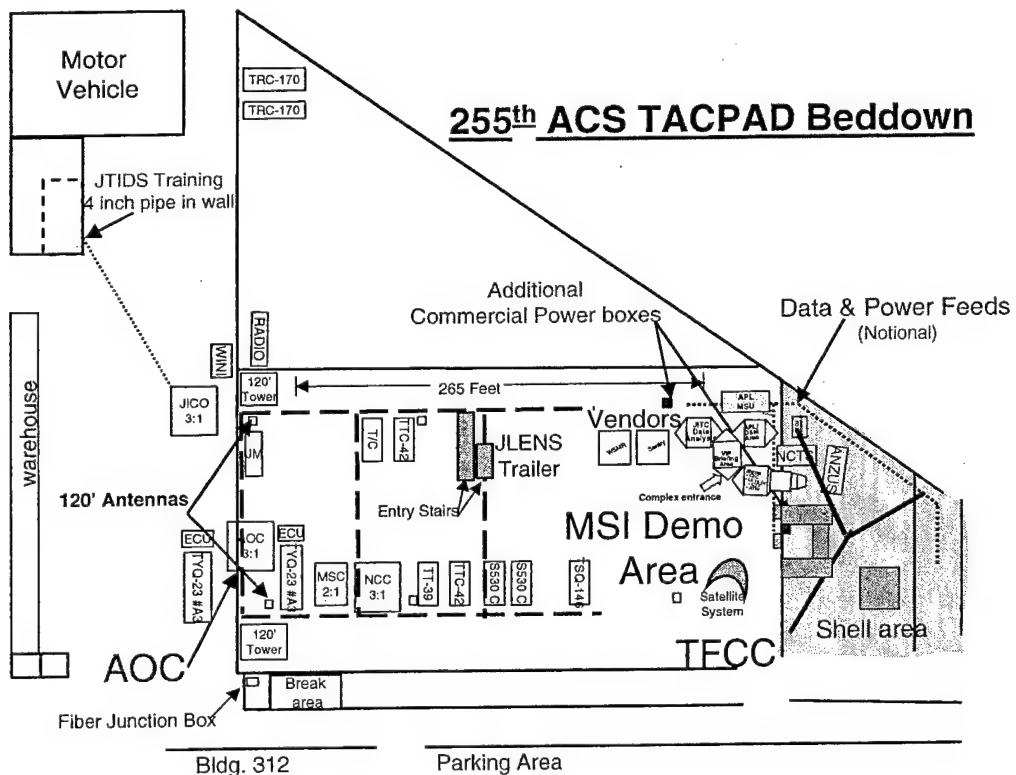
Figure 14. Proposed end-to-end equipment layout for the MSI Demonstration.
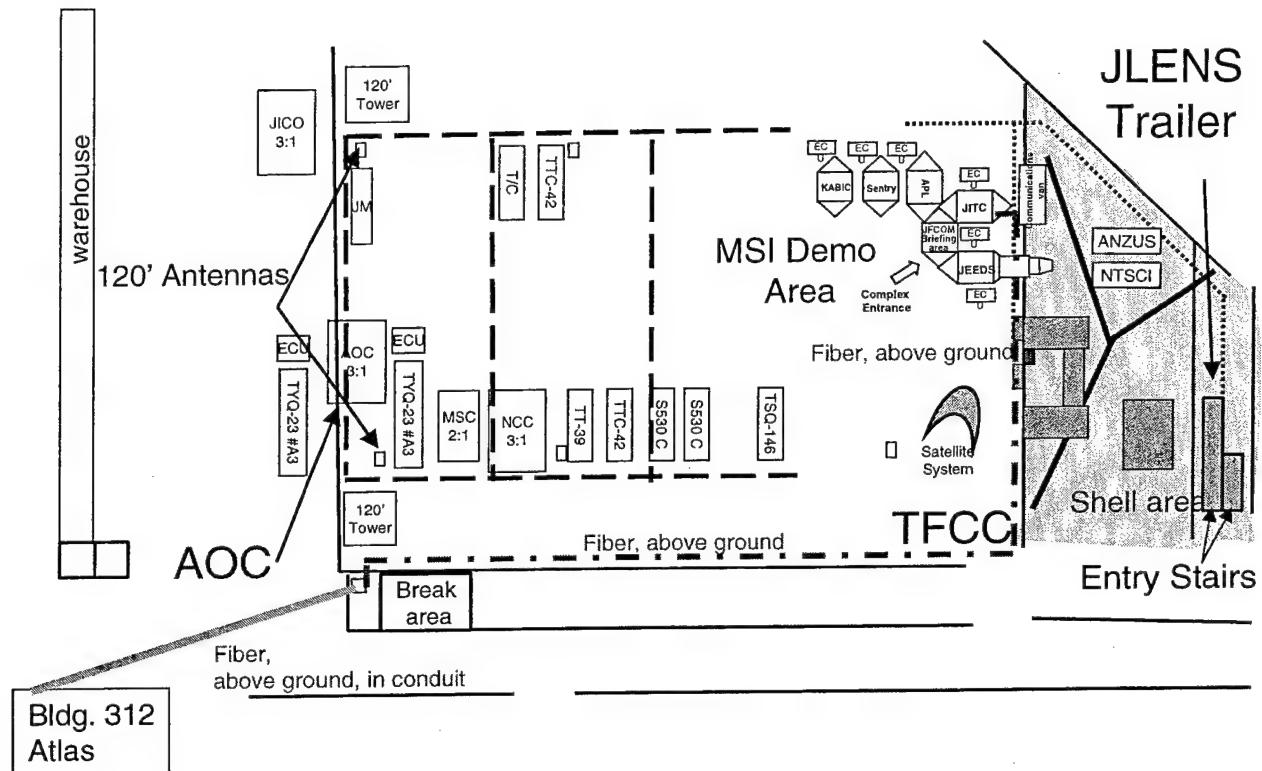
Figure 15. Fiber optic cable layout

The existing installed fiber between Building 312 and the pad is phone company-specific and is not designed to support data (RS-232 and Ethernet). As such, Raytheon will provide a fiber cable with 12 fibers as shown by red line in Figure 12. Raytheon will provide modems for RS-232 to fiber and fiber to RS-232 for ARSR-4, TPS-75, and one serial link from NTSCI to ANZUS. The fiber will be above ground, but it will be protected by a conduit where it crosses the road. The fiber from Building 312 (Figure 16) will terminate in the JITC tent. All subsequent distribution is from here.

In Building 13, fiber cable will terminate in the telephone equipment room. Raytheon will install 4 fiber modems to connect to 2 ARSR-4 sources. The TPS-75 interface to MPS800 is in the Atlas room. Raytheon will provide an RS-232 splitter and a fiber modem in the Atlas room. Fiber will run from the Atlas room to the telephone equipment room and link with the main fiber cable. This avoids security issues with classified TPS-75 and unclassified telephones. In addition, 5 fibers with ST connectors will be available for other users such as ADNET.
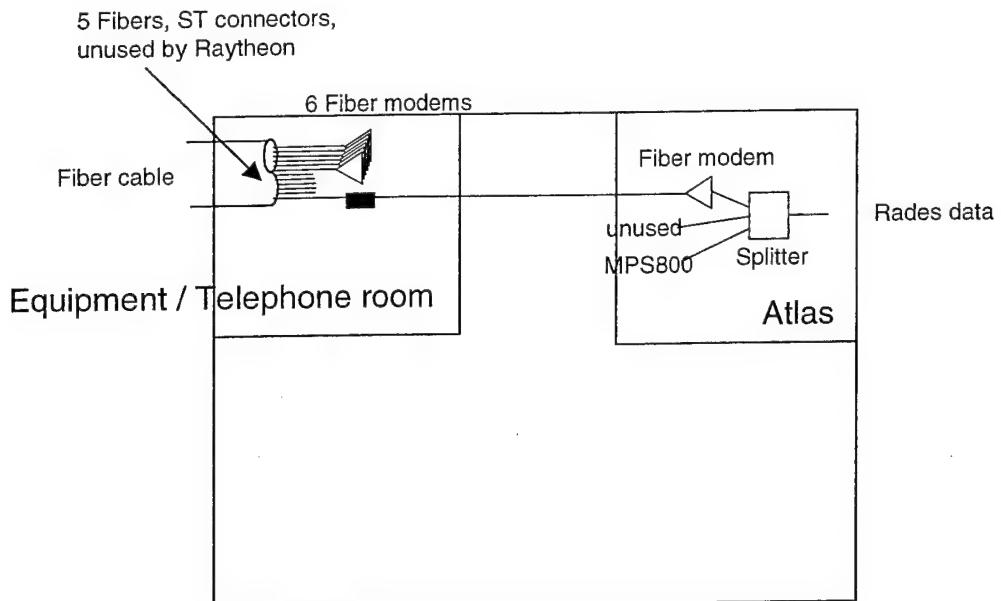
Figure 16. Building 312 fiber modem layout

4.2.1.11 Distinguished Visitor (DV) Tent

A Distinguished Visitor (DV) tent is being set up to support the MSI Demonstration. Historically, included among the numerous JCIET visitors, there are between 30 and 40 Flag and General Officers and civilian equivalents (from O-7 to O-10). A single DRASH-Tent will be provided for DV briefings and will be sourced by the MSI Demonstration Team. The tent will feature chairs, tables, and briefing capabilities to include screens (2), projectors (2), and the switches necessary to switch between any data source or MSI system's output to the screen. ANZUS will provide the TCP/IP Bus and individual data link/sensor feeds as shown in Figure 17.
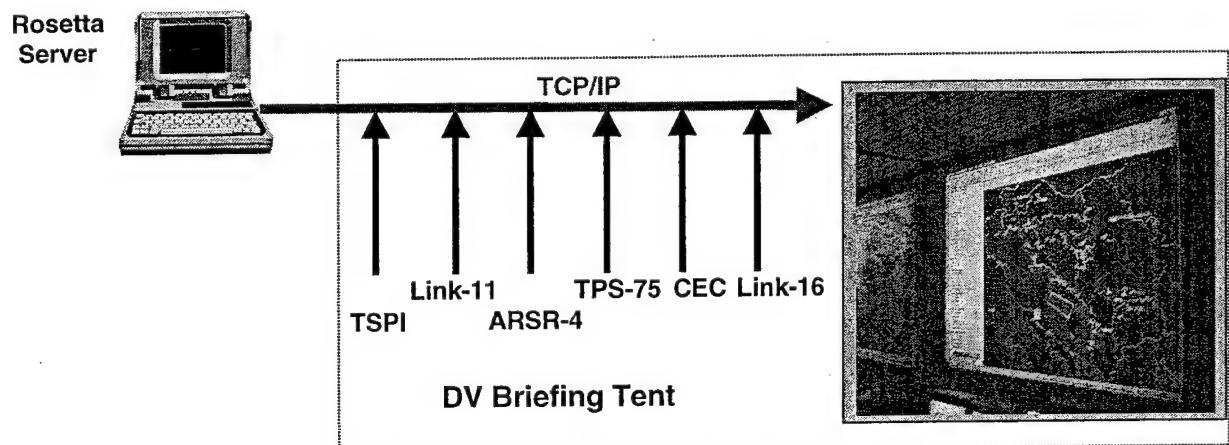
Figure 17. Distinguished Visitor (DV) Briefing Shelter

4.2.2 Data Collection Requirements

Data collected during Phase One of the MSI Demonstration will be used to conduct quantitative comparisons to the available truth data as well as analysis of the results from participating systems. During Phases Two and Three, the data will be used in 'playback' mode to provide inputs for activities conducted in a laboratory-environment. Similar quantitative and relative comparisons will also be performed.

JITC is responsible for all data collection, reduction, and storage efforts. They are also responsible for providing event-timing to event participants. Figure 3 identifies the data recording points required to support the MSI Demonstration's analysis effort. In general, this effort will consist of recording data at the input and at the output of all participating systems, as well as processing the data into formats that will support data analysis.

4.2.2.1 Government-provided Data Input Feed Requirements

JITC will record the following Government-provided live data feeds: Link 11, Link 16, SADL, TIBS, CEC, TPS-75, and ARSR-4. JITC will also record timing and truth data (e.g., TSPI) from all network participants (e.g., data link, intelligence, local radar systems), and the output file of systems used to pre-process the data feeds for participants' use (e.g. Rosetta).

4.2.2.2 Participant-provided Data Output File Requirements

JITC will record output data from each participating MSI system. The demonstration's participants must provide their output data in a format compatible with JITC data recorders and the Performance Evaluation Tool (PET). PET was developed at NSWC Corona for calculating SIAP attributes, and the specific variables required and their descriptions are provided in Table 6.

Table 6. PET format required from MSI Demonstration participants.

VARIABLE	DEFINITION	NOTES
LTN	MSI link track number	This is the single track number generated by the MSI system that can be derived from multiple track numbers
XT	Extract time GPS/UTC	This will be taken from the time stamp provided by JITC
LAT	Latitude in degrees Positive for North - Negative for South Format: +/- DD.ddddd	Track positional information
LONG	Longitude in degrees Positive for East - Negative for West Format: +/- DDD.ddddd	
ALT	Altitude in feet	
CRS	Course in degrees	Track kinematic information

SPD	Speed in knots	
CLM	Climb Angle in degrees	
CAT	Category 0 = Undefined 1 = Air 2 = Surface 3 = Subsurface 4 = Land 5 = Space	
ID	Identification 0 = Pending 1 = Unknown 2 = Assumed Friend 3 = Friend 4 = Neutral 5 = Suspect 6 = Hostile 7 = Undefined	
M1	Mode I	Track IFF information
M2	Mode II	
M3	Mode III	
M4	Mode IV 0 = Not Interrogated/No statement 1 = Interrogated, No response 2 = Interrogated, Invalid response 3 = Interrogated, Valid response	
M1SRC	Mode I Source 0 = Information Unavailable 1 = UPX 29 2 = Link 3 = Manual 4 = CEC 5 = CCU 6 = Link 16 PPLI	
M2SRC	Mode II Source 0 = Information Unavailable 1 = UPX 29 2 = Link 3 = Manual 4 = CEC 5 = CCU 6 = Link 16 PPLI	
M3SRC	Mode III Source 0 = Information Unavailable 1 = UPX 29 2 = Link 3 = Manual 4 = CEC 5 = CCU 6 = Link 16 PPLI	

M4SRC	Mode IV Source 0 = Information Unavailable 1 = UPX 29 2 = Link 3 = Manual 4 = CEC 5 = CCU 6 = Link 16 PPLI	
PLAT	Platform	
ACT	Activity	
SPECTYP	Specific type	
TRKSRC	Track Source 0 = Source N/A 1 = Link 4A 2 = Link 11 3 = Link 16 4 = Link 16 DownLink 5 = IFF 6 = Manual 7 = SPY 8 = SPS 48E 9 = SPS 49 10 = SPS 67 11 = ADT 55 12 = SPQ 9 13 = PAT 1 14 = PAT 2 15 = ASWCS 16 = LAMPS 17 = CEP A 18 = CEP B 19 = M92 20 = SLQ 21 = SQQ 22 = SQR 23 = SQS 24 = TAC	This input is optional, but Participants are encouraged to identify tracks (and their associated track numbers) that are contributing to the fused track to help with the root-cause analysis effort.

4.3 Data Management and Storage

JITC is responsible for formatting and storing data recorded in support of the MSI Demonstration. For purposes of supporting root-cause analysis efforts, the participants are required to maintain a record of their data for a period of five (5) years. Participants are requested to provide the SAT with contact information for accessibility of data as shown in Table 7.

Table 7. Data Management and Storage Worksheet

Name of Person/Organization providing information	System Identification (incl. s/w version)
/Thales-Raytheon	Sentry
Description of data collected, data availability matrix, including POC and accessibility information	
Name of Person/Organization providing information	System Identification (incl. s/w version)
/Raytheon	SIAP Fusion Engine
Description of data collected, data availability matrix, including POC and accessibility information	
Name of Person/Organization providing information	System Identification (incl. s/w version)
WSMR	KABIC
Description of data collected, data availability matrix, including POC and accessibility information	
Name of Person/Organization providing information	System Identification (incl. s/w version)
Description of data collected, data availability matrix, including POC and accessibility information	

4.4 Limitations

The following subsections identify limitations and considerations applicable to this event.

4.4.1 Bailment

All participants are expected to execute a Bailment Agreement that specifies the roles and responsibilities of the Government as well as the participants. It also discusses liability issues and requirements for participation. An example Bailment Agreement is provided as Enclosure 2 of this Appendix.

4.4.2 Cooperative Engagement Capability (CEC) Issues

CEC data will be provided to US-participants only.   Terms and conditions of the CEC data release agreement must be understood and accepted by applicable participants.

4.4.3 Data Distribution

Due to fiscal and schedule constraints, data feeds used during Phase One of the MSI Demonstration will be provided by Raytheon and ANZUS contractors. The supporting data-distribution architecture has been carefully constructed to ensure proprietary interests are protected and that all participants receive identical data feeds.

5. DATA ANALYSIS PROCESS

The SIAP Analysis Team (SAT) is responsible for all data analysis and reporting efforts associated with the MSI Demonstration. Specifically for Phase One of the demonstration, the SAT will perform an IADS performance assessment, prepare individual-performance reports for respective participants' systems, and prepare group-performance assessments for Government-only use.

5.1 Data Availability Matrix

The data availability matrix will be handled differently for the MSI Demonstration than most other events (discussed in the standard DMAP). JITC will have a record of all data collected by each participant. The SAT is responsible for examining the data recorded and identifying the time sets to be analyzed.

5.1.1 Critical Experiments

The MSI Demonstration supports the objectives of Critical Experiment Five, Identification Processing. The general test methodology for this demonstration is provided in Section 4.4.1 of this appendix.

5.1.2 SIAP Metrics

Using the participating systems' composite track-file databases, the SAT will perform quantitative comparisons of SIAP attribute measures to the available truth data (e.g., TSPI) and to an analysis of the results from the systems participating in JCIET activities. As shown in Figure 3, the MSI systems will receive live feeds from JCIET networks. Since MSI system performance will depend on the quality of the information provided as an input, the SAT will also assess the quality of the input feeds available to the participating systems. Individual participants will be responsible for identifying whether any issues relating to the performance of their MSI system were caused by poor data inputs or other related factors.

5.1.3 Root-Cause Analysis

To properly address root-cause analysis issues, data in addition to the participants' PET-output file will be required. As a minimum, this will include identifying the geographic locations of all sensors used. In addition, the recommended root-cause analysis approach is to request the MSI participants support the SAT's efforts if/as

required. To protect proprietary interests, the MSI participants may use whatever data collection approach they use to perform root-cause analysis.

Participants are requested to provide the SAT with contact information for individuals who can contribute to the root-cause analysis effort as shown in Table 8.

Table 8. Root-Cause Analysis Participant Points-of-Contact Worksheet

Name of Person/ Organization providing analysis /Thales-Raytheon	System Identification (incl. s/w version) Sentry
System issues analysis (including TTPs)	
Name of Person/Organization providing analysis /Raytheon	System Identification (incl. s/w version) SIAP Fusion Engine
System issues analysis (including TTPs)	
Name of Person/Organization providing analysis /WSMR	System Identification (incl. s/w version) KABIC System
System issues analysis (including TTPs)	
Name of Person/Organization providing analysis	System Identification (incl. s/w version)
System issues analysis (including TTPs)	

5.1.3.1 Events of Interest

Events of Interest (EOIs) such as a leaker or a fratricide will be identified on-site at the event as well as during the root-cause phase of the analysis after the event.

5.1.3.2 Test Observable Reports

Test Observation Reports (TORs) will be generated on-site and used as part of the root-cause analysis. MSI participants are encouraged to identify times where problems occurred such as loss of connectivity with radars or data networks. A format such as Table 9 should be used during the event to identify problems for later review.

Table 9. MSI data connectivity record

Company/MSI System				
Date	Live Feeds Effected	Start Time of Dropped Connectivity	End Time of Dropped Connectivity	Comments

5.1.4 Perturbation Analysis

The SAT will not conduct perturbation analysis for the MSI Demonstration.

6. REPORTING

6.1 Quick-Look Report

A quick-look report will be generated by the SAT to summarize the initial results of the MSI Demonstration. The report will include preliminary PET-output results.

6.2 Technical Report

The SAT will generate and provide a final Technical Report (TR) for each MSI participant. The report will include a summary of the IADS performance of the participant's MSI system as determined by the SIAP attributes and any associated root-cause analysis. Reports containing direct comparisons of results between participating systems will not be released to participants, and will refer to individual systems in a generic sense. The test report will follow the formatting recommended in the standard DMAP.

6.3 Lessons Learned

Lessons learned from the MSI Demonstration, including issues with the location, logistics, planning, execution, and analysis will be generated by the SAT with inputs from the participants.

6.4 Unresolved Issues

Unresolved issues will be documented and included in the appropriate reports.

7. REFERENCES

MSI System Engineering Team, sponsored by the Combat System Functional Allocation Board, 1995-7.

Time Variant Multi-Hypothesis Correlator Assessment, ACIET 00 Theater Air and Missile Defense Interoperability (TAMD I) Advanced Concept Technology Demonstration, sponsored by USJFCOM, 2000-1.

Theater Air and Missile Defense Capstone Requirements Document (TAMD CRD). (2001, March). U.S. Joint Forces Command.

Combat Identification Capstone Requirements Document (CID CRD). (2001) U.S. Joint Forces Command.

SIAP SE TF Technical Report 2001-001: Single Integrated Air Picture (SIAP) Attributes. (2001, June). Arlington, VA: SIAP SE TF.

SIAP SE TF Technical Report 2001-002: Single Integrated Air Picture (SIAP) Measures of Effectiveness (MOEs)/Measures of Performance (MOPS). (2001, October). Arlington, VA: SIAP SE TF.

SIAP SE TF Technical Report 2001-003: Single Integrated Air Picture (SIAP) Metrics Implementation. (2001, October). Arlington, VA: SIAP SE TF.

ENCLOSURE 1 Letter of Instruction to MSI Participants

UNITED STATES JOINT FORCES COMMAND
1562 Mitscher Ave Suite 200
Norfolk, Va. 23551-2488

3000
J-61
2 April 2002

From: Project Officer, Theater Air & Missile Defense Initiative ACTD
To: Distribution List

Subj: LETTER OF INSTRUCTION FOR MULTI-SOURCE INTEGRATOR
DEMONSTRATION (MSI Demo) AS PART OF THE THEATER AIR AND MISSILE
DEFENSE INITIATIVE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATION
(TAMDI ACTD)

Ref: (a) MSI Demo Meeting, 15 Jan 2002, and 26-27 Feb 2002, SIAP SE TF,
Arlington, VA
        (b) TAMDI ACTD Plan
        (c) Cooperative Engagement Capability (CEC) Security Classification Guide (U)
        (d) OPNAVINST S5513.3C Enclosure 119.6
        (e) Bailment Agreement

Encl: (1) Directions to CRTC Gulfport and 255th Air Control Squadron
        (2) Map of Gulfport, Mississippi
        (3) MSI Demo Site Layout at 255ACS
        (4) Weather
        (5) Gulfport Hotels

1. Purpose: The Government will collect performance data of vendor equipment
during Phase One of a multi-phased Air Defense Command and Control Multi-Source
Integrator (MSI) System Demonstration. The Government shall determine at its
discretion the demonstrations to be performed and the evaluations to be made.

2. Situation: Using a multiphase approach, the demonstrations will use live data inputs
from the Joint Combat Identification Evaluation Team 2002 (JCIET 02) field-environment, 15-26
Apr 02, as well as recorded inputs in the Joint Distributed Engineering Plant (JDEP)
environment, in late-Summer 2002. Phase One will be conducted during JCIET 02 and will
require passive operation of each participating MSI system (no output to the data links, no local
sensor integration). Phases Two and Three will be conducted in the JDEP environment.
Specifically, Phase Two will require passive operation, but the systems will be able to use local
sensors; Phase Three will put the MSI systems into the network as active participants.
Quantitative analysis of the various MSI systems' composite track-file databases will be the
criterion for determining the baseline performance. Results from each of the three phases of

this demonstration will be used to provide recommendations for operational, technical, and interoperability standards for an objective correlation capability that maps to Joint Requirements Oversight Council (JROC)-validated requirements.

Multi-Source Integration (MSI) is the process that (1) performs association/correlation of target track and measurement data received over a variety of tactical and intelligence data networks to create and maintain a composite track-file database, and (2) combines *a priori* data with dynamic data. The output is a tactical database containing all plausible associations and related probabilities. This database can then be used as input into combat systems to support Combat Identification (CID) and C2 functions/displays. The MSI systems may have organic sensors that contribute to the composite track-file database, and they may also have the capability to both transmit and receive data on the various data links.

The goal of these demonstrations is to baseline the performance of existing Air Warfare Command and Control MSI systems. Results will be used to provide recommendations for operational, technical, and interoperability standards for an objective correlation capability that maps to JROC-validated requirements. Reports generated by the government will refer to all participants in a generic sense.

The initial phase of these experiments will take place during JCIET 02, in the vicinity of Gulfport, MS, 15-26 April 02 (participant set-up will begin 4 April). Subject to availability, the government will provide the following live data feeds for use by participating MSI systems: Link 11, Link 16, SADL, CEC, TIBS, TPS-75, and ARSR-4. The government will also record data from each participating MSI system as well as truth data (e.g., TSPI) from all network participants (e.g., data link, intelligence, local radar systems). The recorded data will be used for post-event, quantitative performance analysis as well as for use during follow-on phases supported by the JDEP environment. Note: Details concerning extraction points and format, and input/output recording requirements and methodologies will be provided to participants that participate in the experiments.

The government will derive objective, quantitative performance criteria for this experiment from Theater Air and Missile Defense (TAMD) and Combat Identification (CID) Capstone Requirements Documents (CRD). The data analysis will be performed based on ground truth data, inputs from networks, and data recorded by each MSI system participating in the demonstrations. Using the criteria to compare ground truth with the composite track-file of each MSI device, a better understanding of individual system's capabilities will be gained. The government will conduct data analysis and will be responsible for generating quick-look and formal reports.

3. Mission, Multi-Source Integration Demonstration:

The government's intent is to provide a forum for the conduct of these demonstrations. Individual participants will not receive funding from the government to support personnel or the transportation, storage, operation, or maintenance of their system and/or equipment. Specifically for JCIET 02, the government will provide the following to each participant meeting the specified participation requirements:

- Opportunity to demonstrate their product and to influence the development of an objective-capability standard
- Access to the specified live-data feeds (Subject to availability. Required format and configuration will be provided)

- Copy of live-data feeds (Subject to terms and conditions of participation requirements)
- Ramp space limited to 20' x 40' within the JCIET compound
- Collection of their system's data output file. The government will conduct data analysis and provide vendors with their individual respective results. Government reports containing comprehensive data will refer to participating vendors in a generic sense.
- Opportunity to participate in follow-on demonstrations

(A) Key Personnel:
    Demo Coordinator/Conductor: Pat Bindl, LCDR, USN, USJFCOM J611,   (757) 836-5869, bindl@jfcom.mil
    Technical Coordinator: Dave Chelen, Major, USAF, SIAP SE TF,   (703) 602-6441 x252, ChelenDE@NAVSEA.NAVY.MIL

    Demo Support:
        255 ACS MSI Demo Support NCOIC:
            CMSgt Thomas, (228) 214-6843,
        Robert.Thomas@msjack.ang.af.mil
            SMSgt Broyles, Scott.Broyles@msjack.ang.af.mil
        Raytheon Corp., Lead: John Bagg, (727) 302-2883,
        John_C_Bagg@raytheon.com
        Anzus Lead: Phil Yanni, 0571.2714@compuserve.com
        NCTSI Det 2, POC: OSC John McHann, (757) 444-5509, (757) 438-1001 (cell), mchann@nctsi.navy.mil
            1st Air Force, POC: SMSgt Billy Long, (850) 283-5425,
        billy.long@1staf.tyndall.af.mil
            Site "Mayor", Stan Bialas, Jaycor/JFCOM J61, (757) 222-4817 or (757) 449-6838 (cell), sbialas@jaycor.com

(B) Schedule:
        8-12 April 2002   Set-up & Op-check dates
        15-26 April 2002   Actual Demo days

Training Session Information:
    Tues., 2 April: (Government) Arrival and set-up.
    Mon., 8 April: (Vendors) AM (NET 0800) arrival at 255 ACS compound, set-up.
    Tues., 9 April: Set-up, training, testing.
    Weds, 10 April: Set-up, training, testing.
    Thurs. & Fri., 11-12 April: On-the-air dry runs and communication checks.

    Operational Demo Times:
    Mon. thru Fri., 15-19 April (Day Ops): Vulnerability period: 0900-1400 CDT
    Sun. thru Fri., 21-26 April (Night Ops): Vulnerability period: 1700-2200 CDT
    Government duty day, 15-19 April: 0700-1800 CDT
                21-26 April: 1500-0200 CDT
    Vendor duty day: Vendors are expected to participate in data collection activities during daily vulnerability periods. A daily Vendor/Government mission pre-brief will be conducted by the Technical Director 30 minutes prior to the vulnerability period, and a debrief will be held 30 minutes after the end of daily operations.

All vendor equipment must be removed from the 255th ACS compound by 1600, 28 April 2002.

(C) <u>Tasks</u>:

    (1) <u>Joint Forces Command J61</u>
        (a) Coordinate and execute required funding actions to initiate and sustain event operations.
        (b) Coordinate and execute site daily operations.
        (c) Coordinate services and support with 255 ACS personnel. Serve as interface for demo site personnel.
        (d) Coordinate and establish site layout.
        (e) Publish and distribute Letter of Instruction (LOI).
        (f) Coordinate and facilitate site personnel and visitor control measures for site security.
        (g) Provide general logistical support services as required/directed by MSI Demo Coordinator.
        (h) Consolidate activities, publish and distribute operations plan.

    (2) <u>255 ACS</u>
        (a) Provide 60hz/115v & 208v commercial power for site gear. Each vendor will be provided up to 200 Amp service.
        (b) Provide/coordinate site support throughout event.
        (c) Provide feed of AN/TPS-75 and sensor positioning data.
        (d) Provide support for replacing fiber optic cable run from Bldg. 312 to TACPAD junction box.
        (e) Coordinate with JCIET staff for the requested 27 telephone lines to the MSI Demo area on the TACPAD.

3. ADMINISTRATION AND LOGISTICS

(A) **Access Roster:** Access to the 255 ACS site will be restricted. Upon initial arrival, all personnel will be required to check in with the JCIET Staff at Bldg. 3, CRTC Gulfport. Then transit to the 255th ACS compound (see directions following).
All demonstration site personnel will be required to have and display a JCIET ID badge. <u>All visitors are required to check in with JCIET at Building 3 on CRTC Gulfport and receive visitor's badges.</u>

(B) **All MSI Demonstration participants are to register via Visitor Request JCIET**:

    CTA1 Glenn
    JCIET

104 Biscayne Rd
Bldg. 637
Eglin AFB, FL 32542-5310
(850) 882-6700 (ext 7101) DSN 872
Fax: (850) 882- 8467 DSN 872

(1) No individual will be allowed in the MSI Demonstration Area in the 255th ACS compound without being registered with JCIET and displaying a JCIET badge.

(2) **Site Roster Names**: Submit all names of vendor personnel, prospective visitors and company names to Mr. Stan Bialas by e-mail at <u>sbialas@jaycor.com</u> Please complete this action by COB 31March 2002. If voice communications are needed, phone (757) 222-4817.

(C) **Site Security:** All personnel requiring access to the compound will be provided site security instructions upon arrival, as required. All demonstration equipment access will be provided on a need to know basis. Securing of site will be performed daily and coordinated by the Demo Site Project Officer or his representative. Additional information and phone numbers will be provided.

(D) **CMCC/CMS (Government ONLY):** During the scheduled demonstration event, a Secondary Control Point (JMASTLANT/CCDG-8) will be established on site to facilitate the handling of classified material and cryptographic equipment. All government participants with need to handle or move classified material off site, must have clearance and a courier card. Newly created classified data must be logged and handled in accordance with SECNAVINST 5510.30A. The MSI Demo Coordination Officer will coordinate, sign for, pickup and deliver items mailed to the address listed below. Upon completion of the test event, any items signed for by the Secondary Control Point Custodian will be held and returned to the originating Custodian.

Send all classified material /CCI equipment to:

> **255 ACS**
> **312 47th Avenue**
> **Gulfport, MS 39507-4313**
> **Attn: (CMCC) MSgt Charles Anderson**
> **For: JFCOM MSI Demo Team**

Phone number: MSgt Charles Anderson, 228-214-6815, DSN 363-6815

(E) **Shipment of Gear (Government ONLY):** All gear designated for site placement and required to be delivered by truck, ship to:

CRTC Gulfport

TMO (MSgt Bobby Layton)
Gulfport, MS 39507
Attn: JFCOM MSI Demo Team (255 ACS)

Phone Number: MSgt Bobby Layton, 228-214-6136, DSN 363-6136

Coordinate these actions through Stan Bialas by e-mail: sbialas@jaycor.com or fax: (757) 497-0851. If voice communications are needed, phone (757) 449-6838 (cell) or (757) 222-4817 (Norfolk office).

(F) Vendor security procedures to be in accordance with their existing government guidelines.

(G) All personnel must adhere to personal safety awareness due to the large number of antennas in the demo area. Radiation Hazards (RADHAZ) areas will be marked off and NOT entered at any time.

(H) **Phone Lines-** The site will be equipped with phone lines for official government use. Phone numbers to be provided at the event. Vendors are responsible for their own cell phones to serve for administrative use.

(I) **Parking-** All vehicles driven to the site must be parked in the designated parking area within the compound or outside the compound on 47th Avenue.

(J) **Restrooms-** Both male and female restrooms are located on the compound inside the 255 ACS building 312. (Toilets, no showers).

(K) **Equipment Maintenance-** In case of equipment failure, report all incidents to demo site POC. (Daily brief information)

(L) Food is available in town at numerous restaurants. There is NO messing facilities in the 255th ACS compound.

(M) JCIET souvenirs will be available from Keenan Kline, JCIET Staff, in Building 3, CRTC Gulfport.

(N) Diesel fuel will be available and will be billed through JCIET.

J. A. HORN JR.
CAPTAIN, USN
Chief, C4 Plans, Policies, & Resources Division

Enclosure (1):

Directions to CTRC Gulfport, MS & 255th Air Control Squadron compound

From: Gulfport Airport

To: 255th Air Control Squadron
   312 47th Ave
   Gulfport, Mississippi
   2 miles (approx. 5 minutes)

Directions:

Turn right out of airport onto Airport Road

Turn right at stop sign onto Washington Ave

For initial check-in with JCIET, turn right on Old Hewes to enter CRTC Gulfport and proceed to Bldg. 3

Otherwise, proceed past stoplight and New Hewes Ave entrance - turn right on Chamberlain road

Turn right at stop sign onto 47th Ave

255th ACS is on your right side - turn into guarded gate
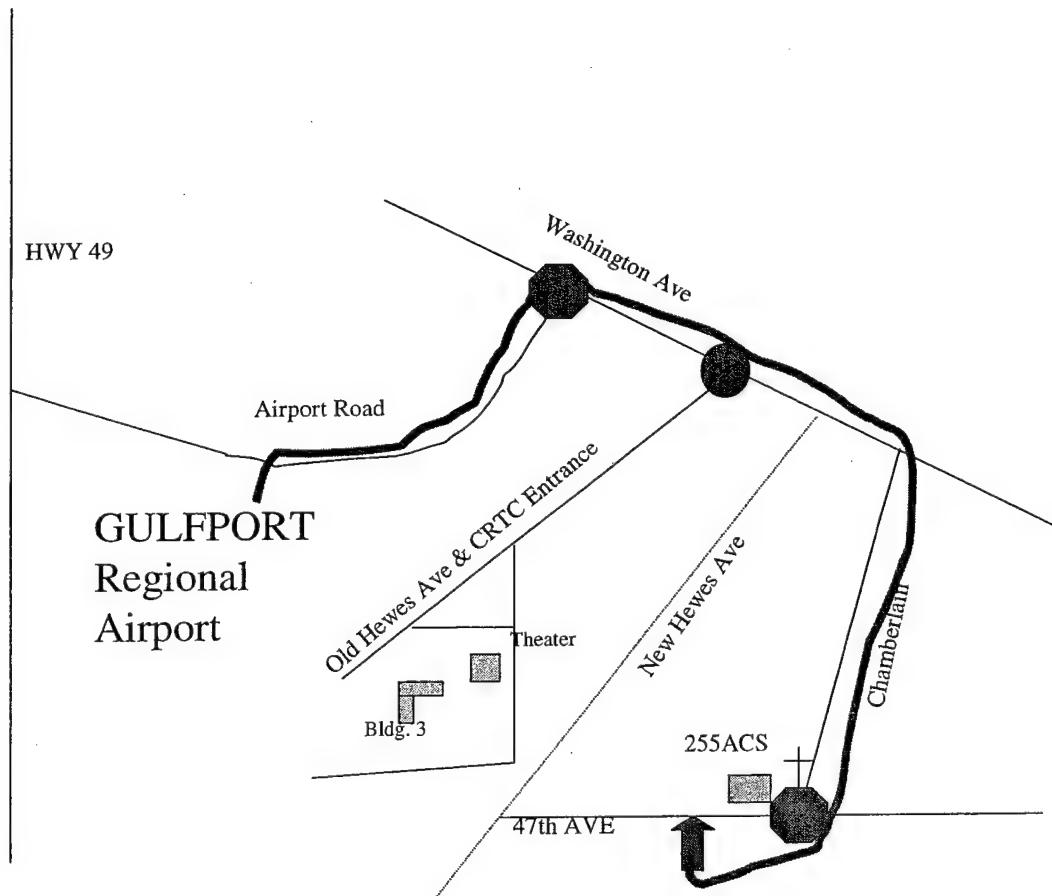
Map of Gulfport, Mississippi
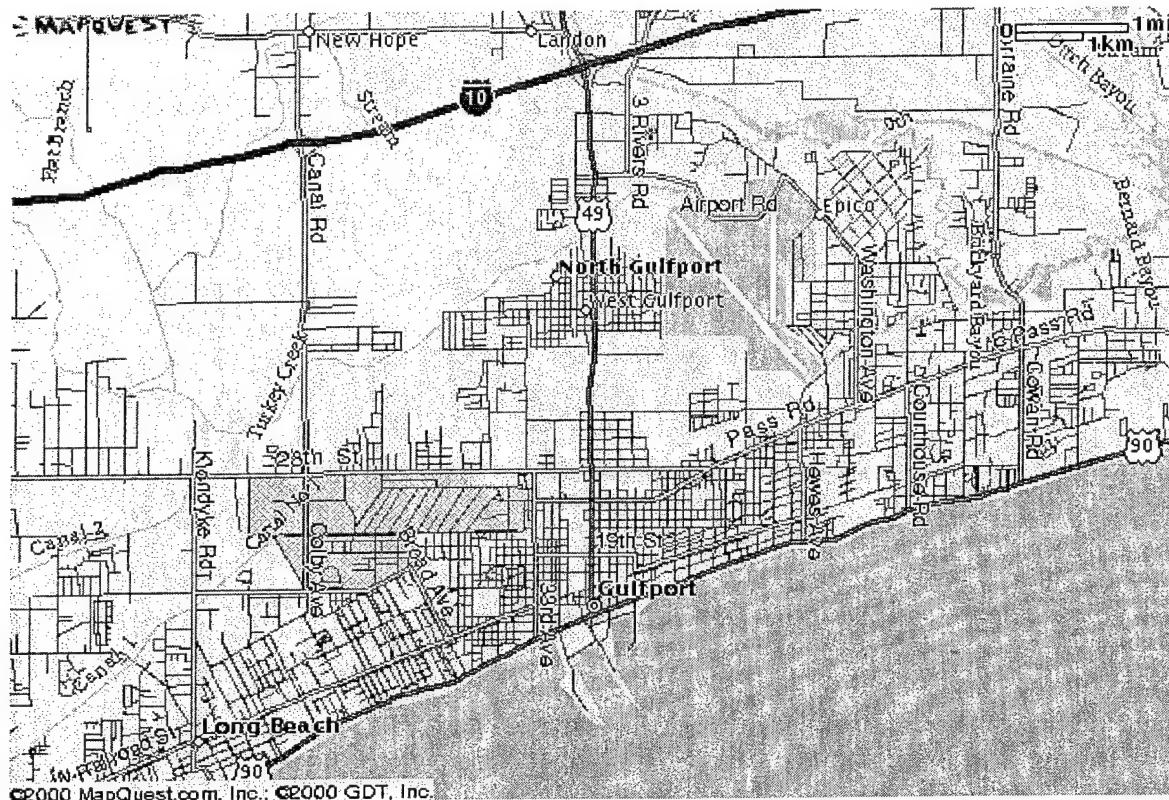
Gulfport, Mississippi

Enclosure (3):

SITE LAYOUT:

Motor Vehicle

RC-170
RC-170

JTIDS Training
4 inch pipe in wall

255th ACS TACPAD Beddown

Additional
Commercial Power boxes

Data & Power Feeds
(Notional)

warehouse

WIN
RADIG

JLENS
Trailer

120' Tower

JICO
3:1

265 Feet

Vendors

AN/TSC
NTSC

T/C
TTC-42

JITC
Data
Analysis

APL
MCU

VIP
Area

Complex entrance

120' Antennas

JM

MSI Demo
Area

Satellite
System

Shell area

ECU
TYQ-23 #A3

AOC
3:1
ECU
TYQ-23 #A3

MSC
2:1

NCC
3:1

TT-39

TTC-42

S530 C

S530 C

TSQ-146

TFCC

Entry Stairs

120' Tower

Break
area

Fiber Junction Box

Bldg. 312
Digicomp (?)

Parking Area

Power Box

Vendors

Digicomp(?)
Sentry
1st AF

JITC
Data
Analysis

APL
MCU

APL/
O&M
Area

ECU
generator

VIP
Briefing
Area

JEEDS
- CEC
- Lk 16
- CTT
- ATW

HMMWV
& shelter

Complex entrance

MSI Demo Area

255th ACS TACPAD

S530 C

TSQ-146

Satellite
System

CCDG-8
TFCC

Enclosure (4) Site Conditions:
      (a) Weather:

GULFPORT, MS
Elevation 30 feet (9 meters)
Weather for Sunday, April 15, 2001

TEMPERATURE

MAXIMUM TEMPERATURE	MEAN TEMPERATURE	MINIMUM TEMPERATURE
86°F	**77.5**°F	**66**°F
Maximum temperature reported during the day.	Mean temperature for the day.	Minimum temperature reported during the day.

PRESSURE AND DEW POINT

MEAN SEA LEVEL PRESSURE	MEAN DEW POINT
1014.3 mb	**68.7**°F
Mean sea level pressure for the day.	Mean dew point for the day.

PRECIPITATION AND VISIBILITY

TOTAL PRECIPITATION	MEAN VISBILITY	SNOW DEPTH
NO DATA AVAILABLE	**10**MI	*NO DATA AVAILABLE*
Rain and/or melted snow reported during the day.	Mean visibility for the day in miles.	Last report for the day if reported more than once.

OCCURENCES

✓Occurred   ✗ Did not occur

Fog ✗	Snow ✗	Thunder ✗
Rain ✓	Hail ✗	Tornado ✗

WIND

MEAN WIND SPEED	MAXIMUM GUST	MAXIMUM SUSTAINED
9.08MPH	**29.90**MPH	**17.25**MPH
Mean wind speed for the day.	Maximum wind gust reported for the day.	Maximum sustained wind speed reported.

(b) Gulfport, MS 39501
April Average Weather (sunrise & sunset is in CDT for

	April 8	9	10	11	12	13	14	15
Sunrise	6:37 AM	6:36 AM	6:35 AM	6:34 AM	6:32 AM	6:31 AM	6:30 AM	6:29 AM
Sunset	7:20 PM	7:20 PM	7:21 PM	7:22 PM	7:22 PM	7:23 PM	7:24 PM	7:24 PM
Ave. High	76°F	76°F	76°F	76°F	77°F	77°F	77°F	77°F
Ave. Low	57°F	57°F	58°F	58°F	58°F	58°F	59°F	59°F
Mean	67°F	67°F	67°F	68°F	68°F	68°F	68°F	69°F
Record High	86°F (1954)	85°F (1953)	85°F (1953)	85°F (1999)	86°F (1954)	86°F (1954)	85°F (1962)	86°F (1981)
Record Low	39°F (1971)	40°F (1971)	41°F (1973)	38°F (1973)	41°F (1951)	44°F (1951)	41°F (1959)	42°F (1950)

	16	17	18	19	20	21	22	23
Sunrise	6:28 AM	6:27 AM	6:26 AM	6:25 AM	6:24 AM	6:23 AM	6:21 AM	6:20 AM
Sunset	7:25 PM	7:26 PM	7:26 PM	7:27 PM	7:27 PM	7:28 PM	7:29 PM	7:29 PM
Ave. High	78°F	78°F	78°F	78°F	79°F	79°F	79°F	79°F
Ave. Low	59°F	59°F	60°F	60°F	60°F	60°F	60°F	61°F
Mean	69°F	69°F	69°F	70°F	70°F	70°F	70°F	70°F
Record High	86°F (1972)	88°F (1967)	86°F (1972)	85°F (1978)	88°F (1981)	94°F (1987)	93°F (1987)	90°F (1987)
Record Low	40°F (1962)	41°F (1962)	39°F (1997)	41°F (1983)	42°F (1953)	43°F (1953)	40°F (1953)	45°F (1986)

	24	25	26
Sunrise	6:19 AM	6:18 AM	6:17 AM
Sunset	7:30 PM	7:31 PM	7:31 PM
Ave. High	79°F	80°F	80°F
Ave. Low	61°F	61°F	61°F
Mean	71°F	71°F	71°F
Record High	88°F (1955)	86°F (1955)	88°F (1967)
Record Low	43°F (1998)	45°F (1968)	48°F (1977)

Enclosure (5):

Billeting: Provided is a list of prospective lodging establishments in Gulfport, Mississippi: (On a soft copy - Double click on the logos to go to reservations)

Best Western Beach View Inn
2922 W. Beach Boulevard
Gulfport, MS 39501
Tel: 228-864-4650 Toll Free: 800-748-8969
Fax: 228-863-6867
E-mail: bestwest-beachview@travelbase.com

Comfort Inn Gulfport
9343 US 49 S.
Gulfport, Mississippi 39503
Tel: (228) 863-5500
Fax: (228) 863-7341
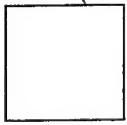
Days Inn Gulfport
15250 Poole St.
Gulfport, Mississippi 395034
Tel: (228) 865-7878
Fax: (228) 865-9511
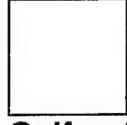
Gulfport Days Inn
128 W. Beach Blvd.
Gulfport, Mississippi 39501
Tel: (228) 864-5135
Fax: (228) 864-7194
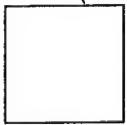
Econo Lodge & Suites
9265 Canal Road
Gulfport, Mississippi 39503
Tel: (228) 863-9910
Fax: (228) 863-8363
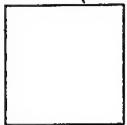
Fairfield Inn Gulfport
15151 Turkey Creek Drive
Gulfport, Mississippi 39503
Tel: (228) 822-9000
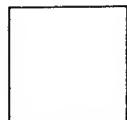
Grand Casino
3215 Beach Blvd.
Gulfport, MS 39501
Tel: (228) 870-7777
Fax: (228) 604-5275
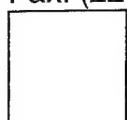
Hampton Inn Gulfport
9445 Highway 49
Gulfport, Mississippi 39503
Tel: (228) 868-3300
Fax: (228) 864-3347
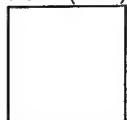
Holiday Inn Express GULFPORT, MS
9435 Hwy 49
Gulfport, Mississippi 39501
Tel: (228) 868-8200
Reservations: (800) 441-0892
Fax: Toll-Free: 8004410892
Tel: 1-228-8647222
Fax: 1-228-8647454
E-Mail: kennyglavan@hibiloxi.com

ENCLOSURE 2 Bailment Agreement

BAILMENT AGREEMENT
BETWEEN THE UNITED STATES GOVERNMENT,
SINGLE INTEGRATED AIR PICTURE SYSTEM ENGINEER TASK FORCE,
AND COMPANY ABC

Bailment Agreement Number:

This Bailment Agreement is entered into this ____ day of _____, 2002, by and between the United States of America, through the Single Integrated Air Picture System Engineer Task Force (SIAP SETF), represented by Kevin Redman, CDR, SC, USN, the Contracting Officer executing this Agreement, (hereinafter "the Government") and Company ABC (hereinafter "Company ABC"), represented by the corporate officer executing this Agreement. In consideration that demonstration and measurement of Company ABCs system's performance using SIAP attributes and metrics is advantageous to and desired by the Government and Company ABC jointly, both parties do hereby understand and agree to the following:

ARTICLE ONE – FURNISHED PROPERTY: Subject to the terms and conditions of this Bailment Agreement, Company ABC agrees to participate in Phase One of the Air Warfare Command and Control (C2) Multi-Source Integrator (MSI) Systems Demonstration by providing and operating the following item for the purposes herein described:

Black Box A

ARTICLE TWO – PURPOSE: The equipment as set forth in Article One herein (hereinafter referred to as "Black Box A") shall be used by the Government to collect performance data during Phase One of a multi-phased Air Warfare Command and Control MSI Systems Demonstration. The Government shall determine at its discretion the demonstrations to be performed and the characterization of performance to be made.

Performance data collected from each phase of the demonstration will be used to baseline the performance of existing MSI Systems and to provide recommendations for operational, technical, and interoperability standards for an objective-capability that maps to Joint Requirements Oversight Council (JROC) validated requirements.

ARTICLE THREE – COST: Company ABC and the Government understand and agree that this bailment is made at no cost to the Government. The Government provides no funds under this Bailment Agreement and incurs no liabilities or contingent liabilities. This Bailment Agreement shall not be used as the basis or part of the basis of any claim against the Government.

(a) Company ABC agrees to provide at no cost to the Government any and all personnel it deems necessary for the safe setup and conduct of the demonstrations. Such personnel participating in or witnessing the demonstration shall be approved in advance by the Government. Company ABC will submit the names and visit requests/security clearances of its proposed participants to the Government as specified in Article Four (a)(2) in order to obtain the Government's approval and access to the demonstration site.

(b) If Company ABC and the Government mutually determine that a modification to the SIAP Fusion Engine is required for conduct of the demonstration, Company ABC may, at its sole discretion and at no cost or liability to the Government, make such modification in order to participate in the demonstration or withdraw from the event without obligation.

(c) All costs related to the delivery and retrieval of the Black Box A from the demonstration site shall be borne by Company ABC. In addition, Company ABC will be responsible for all costs associated with the setup and breakdown and removal of the Black Box A from the demonstration site, as specified in Article Four.

ARTICLE FOUR – DEMONSTRATION SETUP, EXECUTION, AND REMOVAL:
Using a multi-phase approach, the MSI demonstrations will provide Company ABC the opportunity to demonstrate its Black Box A as a potential system for influencing the objective capability standard for the JFCOM Air Defense Command and Control MSI System. This Bailment Agreement applies to Phase One of the MSI Demonstration only.

(a) Phase One MSI Demonstration will be conducted during the Joint Combat Identification Evaluation Team 2002 (JCIET 02) field-environment, 15-26 Apr 02, at Mississippi Air National Guard (ANG) Combat Readiness Training Center (CRTC), Gulfport, MS. Phase One will require passive operation of Company ABC's Black Box A (e.g., no output to the data links, no local sensor integration).

(1) Specifically for JCIET 02, the Government will provide the following:
- Opportunity to demonstrate Company ABC's Black Box A and potentially influence the development of an objective-capability standard.
- Access to the specified live-data feeds. (Subject to availability and subject to non-disclosure agreements. Required format and configuration will be provided.)
- A post-event copy of the truth-data file (TSPI data) as well as a post-event copy of the live-data feeds. (Subject to terms and conditions of CEC Non-Disclosure and Use and Non-Disclosure Agreement at Attachments C and D).
- Formats for inputs and desired output will be provided. Some post-processing may be required. Specifically, the government will provide formats for common inputs to include requirements for electrical and physical layer interface, data link layer, network layer (addressing), and transport layer (format).
- Ramp workspace limited to 20' x 40' within the 255 Air Control Squadron (ACS) compound suitable for setup of a drash tent or other shelter and power supply.

- Shore power (60 hz/115v and 208v 3 Phase commercial power up to 200 Amp service total); telephones; rest rooms; parking space.
- Access to the 255 ACS compound for purposes of setup starting at 8:00am 8 April 2002. Check-in the first day with the JCIET Staff in Bldg. 3, CRTC Gulfport is required prior gaining access to the 255 ACS compound.
- Strict control of data and performance results to protect proprietary interests and intellectual property.
- Details concerning security procedures for the handling, storage, and processing of classified materials shall be in accordance with Attachment A, (DD Form 254).
- Specifics concerning secure handling of automated information is at Attachment B (Automated Information Security Standardized Processing Procedures).
- Characterization of Company ABC's Black Box A's data output file using SIAP attributes and metrics. The Government will conduct performance data analysis and characterize Company ABC's Black Box A's performance using SIAP attributes and metrics. The Government will provide Company ABC with demonstration results via U.S. mail as soon as feasible after the demonstration.
Note: A copy of the data analysis software will not be provided at this time, but may be made available if software applications are authorized for future release and distribution. Technical reports detailing SIAP attributes and metrics calculations are available for review upon request. No group-performance data report will ever be provided to participating companies.
- Opportunity to participate in follow-on demonstrations.
- Additional logistics and schedule-of-events information will be furnished separately by JFCOM in the form of a Letter of Instruction (LOI) (final cutoff date for changes will be 2 April 2002).

(2) Specifically for JCIET 02, Company ABC will provide the following:
- Functional technical description document of how its Black Box A operates (not code level; treat system as "black box") and Black Box A Interface Control Document (ICD); documentation of output data format; or any other documentation required to reduce the Black Box A's output data.
- Access to output data (track database data-extraction file) for recording. Ethernet format is recommended, and specific data fields (e.g., Performance Evaluation Tool " PET" file) will be provided.
- A copy of (or access to) Company ABC's Black Box A's track data-extraction file. Format will be specified.
- Personnel to support and participate in data reduction and analysis effort (if/as needed).
- Black Box A must function at the Command and Control (C2) System level (e.g., link level) and support the use of more than one type of input source.
- Participants must honor terms and conditions of Attachment C, Use and Non-Disclosure Agreement and Attachments D, Non-Disclosure Agreement Specific to Cooperative Engagement Capability (CEC).
- All equipment required to operate and support Company ABC's Black Box A. This includes, but is not limited to, shelters, racks, tables, chairs, paper, storage vans, classified-material storage, and miscellaneous support equipment as needed,

including its own quiet power generators (in the event JCIET is unable to provide adequate shore power). Note: The workspace to be provided by the Government is limited to a 20' x 40' area and the commercial power available to each vendor is limited.
- Possession and control of the Black Box A and all ancillary equipment required for the demonstrations shall remain with and be operated by Company ABC's personnel, or designated non-government representative, at all times during the Phase One MSI Demonstration.
- Registration of Company ABC's participants and supporting staff with JCIET, via website (https://jciet.elgin.af.mil) not later than 4:00pm, 22 March 2002.
- Visit requests and security clearance information for approved participants, including full name, SSN, level of clearance, and dates of visit (8-28 April 2002) not later than 22 March 2002, to JCIET Security Office, ATTN: CPO Dan Long, Phone: (850) 882-6700, FAX: (850) 882-8467. Visit requests shall cite this Bailment Agreement number as the applicable contract. SECRET clearance level is required for all participants. See Attachment A (DD Form 254).
- Breakdown and removal of the bailed property from the demonstration site at the conclusion of the Phase One MSI Demonstration shall be completed not later than 28 April 2002.

(b) The Government's Technical Representative, the focal point for technical coordination of the MSI Demonstration, is Dave Chelen, Major, USAF, SIAP SETF: telephone (703) 602-6441 X252 (DSN: 332); e-mail: chelende@navsea.navy.mil.; or mail at: Single Integrated Air Picture, Attn: Major Chelen, CM3 Room 1142, 1931 Jefferson Davis Hwy, Arlington, VA 22202-3523. Major Chelen will convey the Government's technical perspective during the Phase One MSI Demonstration; provide any necessary technical information required during the demonstration; and officially receive for the Government any demonstration performance output data or other information from Company ABC marked "proprietary information."

ARTICLE FIVE – TITLE: Title to, possession and ownership of the bailed Black Box A shall at all times be in, and remain with, Company ABC.

ARTICLE SIX – DELIVERY AND ACCEPTANCE: Company ABC is not required to deliver the bailed property to possession of the Government; therefore, no acceptance by the Government will take place. Possession and control of the bailed property will remain with Company ABC.

ARTICLE SEVEN -- PERIOD OF BAILMENT AND TERMINATION: This Bailment Agreement shall become effective upon execution of this agreement, and terminate on or before 28 April 2002, the anticipated date of removal of the bailed property from the demonstration site after completion of Phase One of the MSI Demonstration, with the exception of the non-disclosure agreements, which will remain in effect indefinitely, unless disclosure authorization is provided in writing by the Contracting Officer or other Government official responsible for releasibility. All costs associated with delivery,

setup, breakdown, and removal of the bailed property will be the responsibility of Company ABC.

ARTICLE EIGHT – DEMONSTRATION DATA AND CHARACTERIZATION OF PERFORMANCE INFORMATION: (a) Any demonstration performance data collected, any reports characterizing such data using SIAP attributes and metrics or any other information collected or generated by the Government as a result of demonstrating the bailed property shall be the property of the Government. The Government does not agree to safeguard, above or beyond the requirements of statutory law governing disclosure of trade secrets or other similar information, the performance data or any reports which may characterize that performance using SIAP attributes and metrics or any other information gathered during the demonstration of the Black Box A under this Bailment Agreement.

(b) The Government agrees to furnish to Company ABC only the demonstration performance data related to Company ABC's Black Box A and the Government's subsequent characterization of that data using SIAP attributes and metrics, but will not provide any group-level characterizations of demonstration data or other reports generated by the Government using such data. Any group-level reports of performance measurement generated by the Government as a result of the demonstrations will refer to all participants in a generic sense and will not be provided to any of the participants.

(c) Company ABC shall not use any characterization of demonstration performance data using SIAP attributes and metrics, provided by the Government as a result of this demonstration, as the Government's endorsement of its Black Box A.

(d) All equipment operation or performance data furnished or distributed by Company ABC as a part of demonstration participation shall be considered to be non-proprietary. Any information that Company ABC considers proprietary shall be delivered only to the Government's Technical Representative, set forth in Article Four (b) and shall be specifically marked as "proprietary information".

ARTICLE NINE – SECURITY AND HANDLING OF CLASSIFIED AND PROPRIETARY INFORMATION: (a) Attachment A, DD Form 254, sets forth the security aspects associated with classified information related to the Phase One MSI Demonstration. Company ABC agrees to comply with all applicable security regulations.
(b) Company ABC further agrees to protect any data marked "proprietary information," that it may receive either directly or indirectly from the Government or another contractor as follows:
    (1) Use it only for the purpose of the multi-phase MSI Demonstrations.
    (2) Hold it in confidence during the period of the Phase One MSI Demonstration and beyond, unless and until written permission for releasibility is obtained from the Government in accordance with the DD Form 254. Company ABC agrees to apply the same degree of care it applies to its own proprietary information.
    (3) Make it available only to its employees who are bound by and have been made aware of the restrictions contained herein concerning the use of such "proprietary

information," and who have a "need to know" in order to carry out their respective functions in connection with the multi-phase MSI Demonstrations.

(4) Report immediately to the Contracting Officer any inadvertent disclosure of "proprietary information" as soon as such disclosure is known and endeavor to correct the effects thereof only as directed by the Contracting Officer in order to prevent further disclosure.

ARTICLE TEN – NON-DISCLOSURE OF GOVERNMENT-FURNISHED INFORMATION:

Company ABC agrees by signature on Attachment C, Use and Non-Disclosure Agreement and Attachment D, Non-Disclosure Agreement Specific to Cooperative Engagement Capability (CEC), not to release outside Company ABC, or within Company ABC to other than personnel with the "need to know," the Government-furnished information specified in Attachments C and D. Company ABC agrees to use the information provided only for the use(s) specified in Attachments C and D and further agrees to label and handle any and all information received during the Phase One MSI Demonstration as agreed by signature on Attachments C and D.

ARTICLE ELEVEN – LIABILITY, RESPONSIBILITY, AND INDEMNIFICATION: (a) The parties agree that this Bailment Agreement shall not create any liability, contingent or otherwise, on the part of the Government, nor give rise to any claim of any type against the Government The Government will exercise ordinary diligence in supporting Company ABC's personnel to set up, operate, and breakdown the Black Box A, if/as needed.

(b) The Government shall not be responsible for any personal injuries to Company ABC's personnel, representatives or invitees incident to the demonstration or other bailment use of the Black Box A.

(c) Since Company ABC shall be responsible for any necessary operation of the bailed Black Box A for conduct of the demonstration, Company ABC shall be responsible and liable for any damage to Government property or injury to Government personnel, Company ABC's personnel or representatives or other participating third parties incident to the demonstration of the bailed Black Box A.

(d) The Government shall not be responsible for any property damages to the Black Box A, or any other property of Company ABC damaged in the course of setup, demonstration execution or breakdown and removal, except in cases of gross negligence or willful misconduct on the part of the Government.

(e) Company ABC agrees to hold the Government harmless with respect to any personal injury or property damage not covered in (b), (c), or (d).

(f) Company ABC provides the Black Box A at its own risk and costs in return for the opportunity to participate in the demonstration and receive the specified Government data files including characterization of only its Black Box A's performance results using

SIAP attributes and metrics. No other participant's system performance data or characterization of performance will be provided to Company ABC by the Government. In accordance with Article Three, all loss, damage, destruction, maintenance, modification or repair of the Black Box A shall be at Company ABC's expense, and Company ABC agrees to provide any setup, operation, maintenance or repair services required for conduct of the demonstration.

ARTICLE TWELVE – *APPLICABLE LAW:* This Bailment Agreement shall be governed by Federal laws and regulations.

ARTICLE THIRTEEN – *ATTACHMENTS:* Attachments are hereby incorporated and made a material part of this Bailment Agreement as follows:
(a) ATTACHMENT A: Contract Security Classification Specification - DD Form 254.
(b) ATTACHMENT B: Automated Information Security Standard Processing Procedures (AISSPP)
(c) ATTACHMENT C: Use and Non-Disclosure Agreement
(d) ATTACHMENT D: Non-Disclosure Agreement Specific to Cooperative Engagement Capability (CEC).

ARTICLE FOURTEEN – *MODIFICATION:* No modifications to this Bailment Agreement shall be valid and binding unless entered into in writing while this agreement is in effect and executed by signature of both parties.

ARTICLE FIFTEEN – *COMPLETE STATEMENT OF AGREEMENT:* This written Bailment Agreement constitutes the complete and exclusive statement of the bailment between the two parties. No other written or spoken statement shall contradict, add to or subtract from the agreement created by this document. A properly executed bilateral modification will have the same effect as if it were included in this original Bailment Agreement.

NOW THEREFORE, the parties hereto warrant that each representative executing this agreement by affixing his or her signature below has full authority to bind the respective party, and so enter into the agreements set forth herein, <u>which shall become effective upon the last signature date shown below:</u>

Company ABC, Manager of Contracts

SIAP SETF, Contracting Officer
KEVIN REDMAN, CDR, SC, USN

_____

_____

Signature

Signature

_____

_____

Date

Date